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Letters

Frankfurt Campanile

Relative to your article in the February 1993 issue of RECORD, page 71, and Mr. Jahn's inferred parallel between his Messe Tower plaza and St. Mark's Square, I can only suggest that either Mr. Jahn return to school or he "get off the stuff."

Mario A. Polizzotti, Architect
New Canaan, Connecticut

Postscript on Brickbats

Raimund Abraham's design for the New Austrian Cultural Institute on East 52nd Street, which you denounced in your February 1993 editorial ["Flawed Signal, RECORD, page 9], is a strong work of a particularly important and diligent architect which ought to be realized. The strange black and white forms of his mask/core/vertebra concept engage and provoke as they add a modern poem to a city which has been choking in developers' historicist constructions for decades. Your remarks are indicative of a traditionalism which ought to leave room for new approaches. Our modernity is incomplete. Modernity should embrace new definitions of time; simultaneous time, archaic coexisting with ultra-modern, and reversible time. We might imagine new ways of thinking which correspond to a generation which longs to break free of the successive, linear time monumentalized by Venturi's kitsch clock.

Steven Holl, Architect
New York, New York

I write to express my dismay at your February editorial. Your acclamation of the winning design for the Staten Island Ferry Terminal building with two vague words, "strong" and "simple" fails to establish why you think the design will "wear well." The selection of this particular design is a lost architectural opportunity. The competition in which several prominent architects particpated could have culminated in the creation of a serious public structure. Instead New Yorkers will have to expend "a fortune" to subsidize a giant and already wearisome joke.

The building's claim to originality is its 10-story-high clock, of no relevance and little use except as a foil for distracting from the remainder of the design with its cliché cut-outs. But that bit of frivolity might be forgiven if the building embodied hints of architectural invention. Alas, the published photographs so far indicate none.

Unfortunately for the architectural community, it is this self-centered, ego-laden approach to design that reinforces the public image of architects as superflous and, using your word, "quirky." By contrast, the winning design for the Austrian Institute Building, despite its small size, within a confined and confining site, is an elegant and sincere exploration of mathematical proportion. Its sensitive manipulation of surfaces and volumes makes it an architectural expression of some of the deeper concerns of our time, not an evasive spoof of both old and new architecture.

For laymen lacking training in architecture, originality which challenges the comforts of the familiar is typically resisted. It is surprising to read the same reactions in your editorial.

Medhat Salam, Architect
New York, New York

I found Stephen Kliment's February editorial to be totally inappropriate. As editor of one of

Continued on page 6

Calendar

Through April 30

The Art of Architecture, an exhibition of works by laureates of the Pritzker Architecture Prize, sponsored by the Hyatt Foundation; National Building Museum, Washington, D. C. Call Donna Anderson at 202/272-3606.

April 23

American Arbitration Association 17th Annual Dispute Resolution Day. Contact American Arbitration Association, 140 West 51st St., New York, N. Y. 10020 or call 212/484-3233.

April 25

Conference on "The Environment, Sustainable Development, and Design." Contact Harvard University Graduate School of Design, 48 Quincy St., Cambridge, Mass. 02138 or call 617/495-4315.

May 1-5

"Agenda for America's Communities" conference in Chicago. Keynote address by Atlanta Mayor Maynard Jackson. Contact Margot Morrison at American Planning Association, 1313 E. 60th St., Chicago, Ill. or call 312/955-9100.

May 3-7

Course on Reinforced Concrete Design, University of Wisconsin-Madison, College of Engineering. Contact Rolf T. Killingstad, UWM, 432 N. Lake St., Madison, Wis. 53706-1498.

May 15-July 25

Design, Mirror of the Century exhibition, retracing the History of Design for the last 150 years through objects of daily life; at the Grand Palais, Paris. Contact Claudine Colin Communication at 42-72-60-01.

May 16-19

International Contemporary Furniture Fair, Jacob K. Javits Convention Center, New York City. Admission $20. Contact Tobin and Tucker, 212/879-5776 or 800/272-SHOW.

Continued on page 6

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Continued from page 4

only three major architectural publications, Mr. Kliment already exercises enormous power and control over what receives publicity and exposure in the profession—it should hardly be necessary for him to further impose his views through this type of editorial. For him to characterize the decisions of a legitimate architectural jury as a "failed selection process" results in a further expansion of the media's already excessive power to form public opinion.

Whether or not Mr. Kliment personally likes or dislikes the competition winners is completely beside the point, and is certainly not the reason I subscribe to RECORD; the competition process exists to allow decisions not to be controlled directly by such powerful institutions as the press. A carefully argued editorial on the merits of two different urban-design concepts, one that calls for holding street edges, repeating forms of neighboring buildings, etc., versus another that calls for monumental formal treatment of institutional structures, layering of urban space, etc. would have been well illustrated by the Venturi, Scott Brown and Abraham competition schemes, respectively. But that is not what we have here. Please, Mr. Kliment, spare us the Ellsworth Toohey treatment!

Robert Mc[illegible], Architect
Chair, P[illegible]
University [illegible]
Gainesville, F[illegible]

I appreciated your February editorial. It's about time in this business that somebody had a real opinion. Thus goes a sacred cow. Wonderful.

William E. Markcrow
Fair Haven, Vermont

Brooding Hulk

Didn't our profession recently go through 10 years of turmoil that stressed the importance of designing for humans? Wasn't our goal to strive to get away from brooding hulks that pound the user into submission? Wasn't your magazine on the battlefront urging this change? If so, why have you chosen to publish the latest depressing slab [by Antoine Predock] to come out of Albuquerque [RECORD, February 1993, page 62]?

I read with keen interest how Mr. Betsky's February article was going to justify the total lack of regard for scale, surrounding, and use. His words failed him. Mr. Predock's concern for the landscape is expressed by pounding flat the site, removing all vegetation, plopping this mass of cute windows punched into a slab of brick and concrete, adding six small trees and acres of concrete paving, and claiming that the design echoes the mountains that surround it. Sure! That description is made for an awards jury. It will be selected because of the architect's reputation; not the project that he designed.

Although the sculptural portions of the mass are very impressive, as is the size of the project, Mr. Predock is continuing his trip down "memory lane" in some strange attempt to design current projects in the 1960s brutalism. Just because the client wanted a building that people would hate or love, couldn't this have been done with a bit more human touch than the final result?

I thought that the days of starting with a slab, sticking holes in the skin, and submitting it for award were gone for good. Now I'm not so sure.

Gary L. Hill, Architect
Houston Texas

Mexican Standoff

I am disturbed by the superficiality of "Going for the Gold South of the Border" by Peter Hoffman [RECORD, February 1993, page 30]. There were many inaccuracies about Mexican *and* American architectural practice. Furthermore, the author demonstrates an appalling ignorance of the Mexican educational system.

Rossana M. Gutierrez,
Architect
Nyack, New York

Mr. Hoffman replies:
I cheerfully confess that I am not an expert on Mexico or Mexican architectural education. This was not a piece from a correspondent in Mexico on the Mexican educational system, but a Practice News business story on professional opportunities that might be afforded by the NAFTA agreement, as seen from a Washington perspective. As to "numerous inaccuracies," she doesn't back that up with any examples. In any event, not one of my sources—all of them respected architects with professional experience in Mexico—have complained about my reporting.

Corrections

"Caryakids At Play" [RECORD, March 1993, page 78] in several places made incomplete reference to the design architects. The correct credit should read: Venturi, Scott Brown & Associates.

The rendering of the A. L. Lewis Elementary School was drawn by Terry Guilbeau [RECORD, March 1993, page 13]. ■

Calendar

Continued from page 4

June 7-10
A/E/C Systems '93 trade show, Anaheim Convention Center, Anaheim, Calif. Contact Sharon Price, 800/451-1196.

June 17
All-day conference on "Rethinking the Suburbs: Overcoming Impediments to Change." Speakers include Andres Duany on "Decline of the Suburbs." Fee: $75. Call Abigail Lattes at Maryland Institute College of Art 410/225-2219.

June 18-21
American Institute of Architects 125th annual convention in conjunction with World Congress of Architects, Chicago. Contact Lynne Lewicki, 202/626-7467.

June 23
"Focus: Healthcare" seminars and break-out sessions on healthcare topics. Write Pacific Design Center, 8687 Melrose Ave., Los Angeles, Calif. 90069 or call 310/657-0800.

September 5-9
Design Renaissance: Designing for Regeneration; Glasgow, United Kingdom. Write the International Design Congress, 29 Bedford Square, London WC1B 3EG or call 71/580-2338.

November 18-21
Sixth Symposium on Healthcare Design, Chicago Marriott, Chicago. Contact National Symposium on Healthcare Design, 4550 Alhambra Way, Martinez, Calif. 94553-4406; 510/370-0345.

Competition
A $10,000 Ermanno Piano Scholarship for six months' work (October 1993 to March 1994) in Renzo Piano's Genoa, Italy, laboratory. Newly graduated architects may apply by letter, including CV, short A4 dossier, examples of work, to Renzo Piano Building Workshop, Piazza San Matteo 15 (16123 Genova) before May 31. For more information, call 10-203-856. ■

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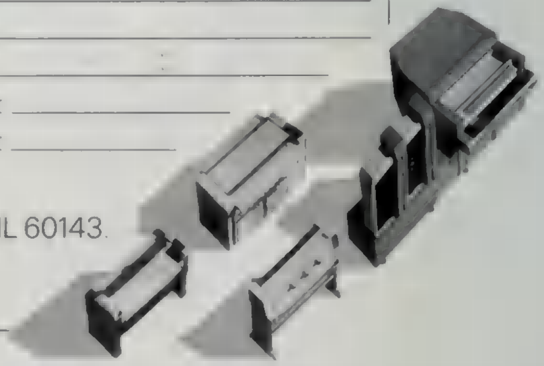

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Environmentalists at a Crossroads

Paul Kennedy's new book *"Preparing for the Twenty-First Century"* paints a grim picture facing us on Spaceship Earth in the next century. Overpopulation, a growing gap between rich and poor, hunger, disease, environmental disaster—all of these threaten to dislocate for good a world already severely battered. Yet the one problem with Kennedy's thesis is his assumption that the bashing will proceed unchecked and that the marketplace will fail to come up with methods to solve some, if not all, the hazards. Nowhere is this need more pressing than in dealing with the environment, where costly, misdirected overkill combined with the neglect of even greater perils threatens to derail and even bankrupt a vigorous, upbeat movement dating back to the late 1960s. 1969, remember, was the year the Cuyahoga River caught fire, dramatizing pollution as a national issue.

Since then, various pieces of legislation such as the Clean Water Act, the Clean Air Act, and the Endangered Species Act have served to contain real threats to America's environment. But largely buried by the enthusiasm are two dangers. The first, to use an appropriate metaphor, is missing the wood for the trees. Dramatic and tragic as they are, such disasters as Love Canal and the Exxon Valdez do not necessarily need the kind of massive legislative and regulatory response that is sometimes likened to killing a fly with a howitzer. The oil spilled by the tanker damaged the regional ecology for years, but nature, according to scientists, will assert itself and eventually the region will return to normal. And legislation spawned by the Love Canal soil pollution has triggered such instances of overkill as using $20 million of Superfund money to clean up a polluted site at Columbia, Mississippi, in order to bring its toxic ratio down to a level so squeaky clean that children can eat a half spoonful of dirt a month for 70 years without the risk of cancer. The Congressional Office of Technology Assessment was in fact told that toxic chemicals in the environment cause no more than 1 to 3 percent of all cancers.

There are other instances. The campaign to root out asbestos from every nook and cranny in the built environment is now, according to the Enviromental Protection Agency, agreed to have missed its mark, having released tiny asbestos fibers into the air, aggravating a problem rather than relieving it. Similarly, the hazard in dioxin, at one time labeled by the EPA as a highly toxic substance, has since been downgraded, and of the 2000 residents of Times Beach, Missouri, evacuated in 1982 due to dioxin found in its dirt roads, none has suffered harm.

Meanwhile, real attention to the longer range problems of global warming, acid rain, deforestation, and ozone depletion has gone begging. Focusing on local or regional environmental concerns has sidetracked those far greater hazards, which were so vividly highlighted at last year's Rio conference and which if ignored could place this planet into a terminal tailspin. These problems are international. In Norway, 90 percent of acid rain comes on winds from abroad.

In this scenario the architect has three roles to play. One, continue to design individual buildings and complexes so as to conserve nonrenewable resources and to limit emission of toxic substances into the ground or air. Two, to seize this crucial opportunity to train for and provide a vital, fee-producing new service as environmental specialists. And, three, prepare to push, at the landmark AIA/UIA convention this June in Chicago, for a better balanced, better focused, and more far-sighted national policy on saving our environment. *Stephen A. Kliment*
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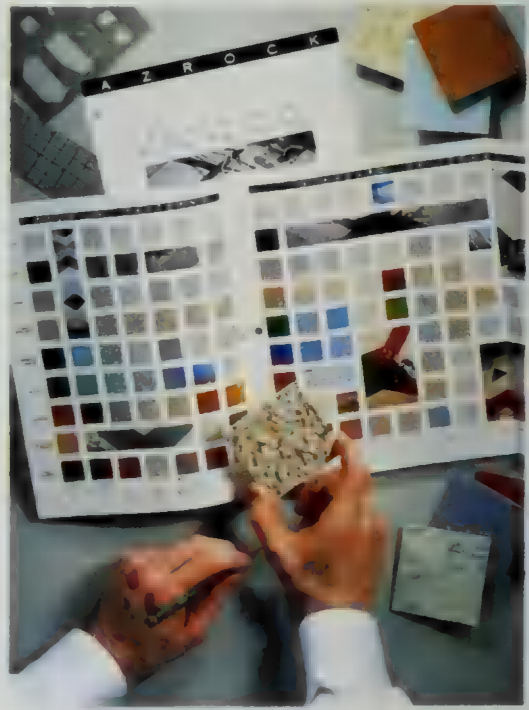

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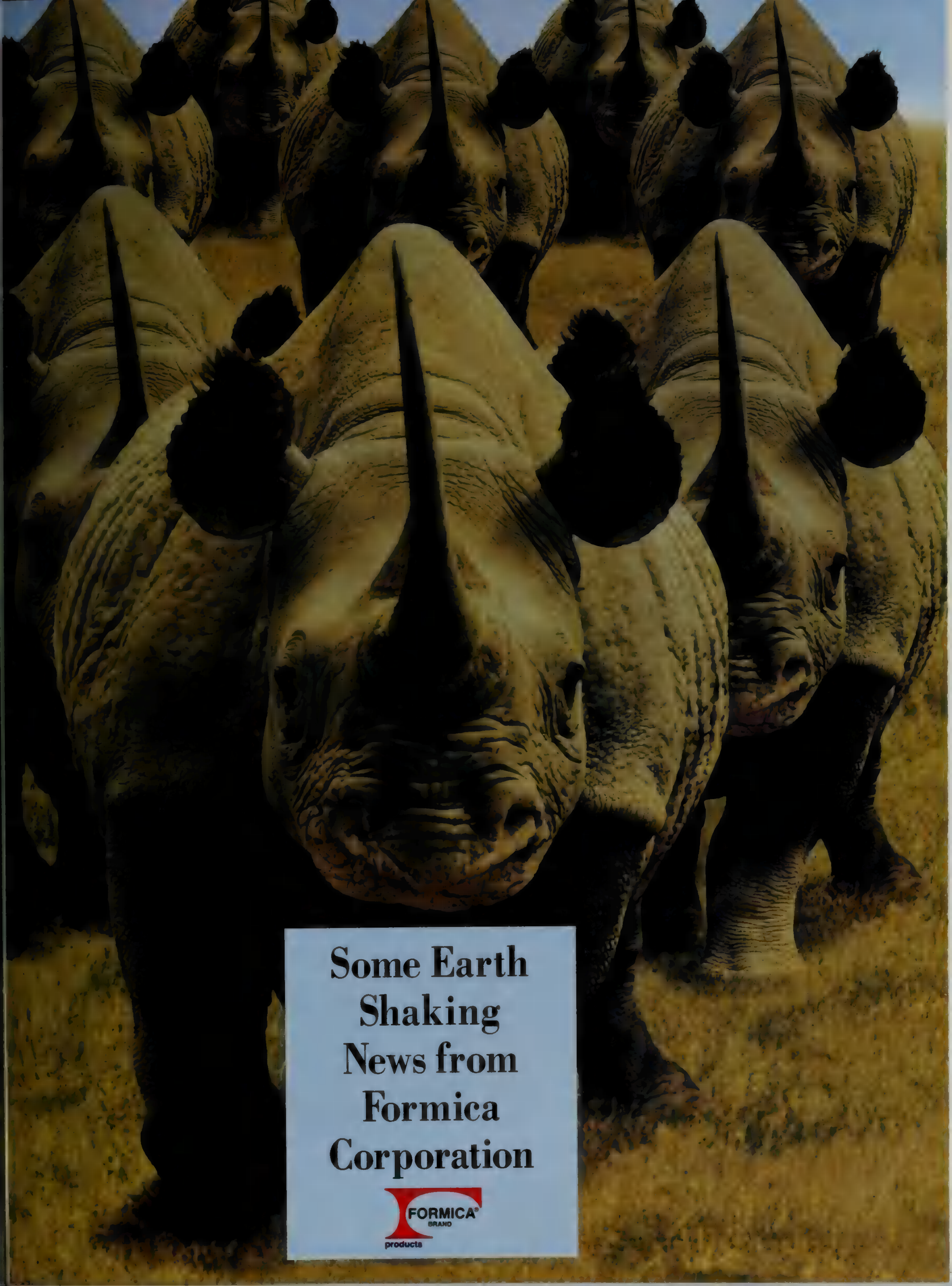
CALL FOR ENTRIES

RECORD INTERIORS 1993

The editors of ARCHITECTURAL RECORD announce the 24th annual RECORD INTERIORS issue. Architects and interior designers are invited to submit recently completed interior design projects in all categories; work previously published in other national design magazines is disqualified. There are no entry forms or fees, although submissions must include photographs (transparencies, slides, or prints), floor plans, and a project description—bound firmly in an 8½ by 11-in. folder—and be post-marked no later than April 30, 1993. Winning entries will be featured in the September 1993 RECORD INTERIORS. Other submissions will either be returned or scheduled for a future issue. If you would like your entry returned, please include a self-addressed envelope with appropriate postage.

Submissions should be mailed to:
Karen D. Stein
RECORD INTERIORS
ARCHITECTURAL RECORD
1221 Avenue of the Americas
New York, New York 10020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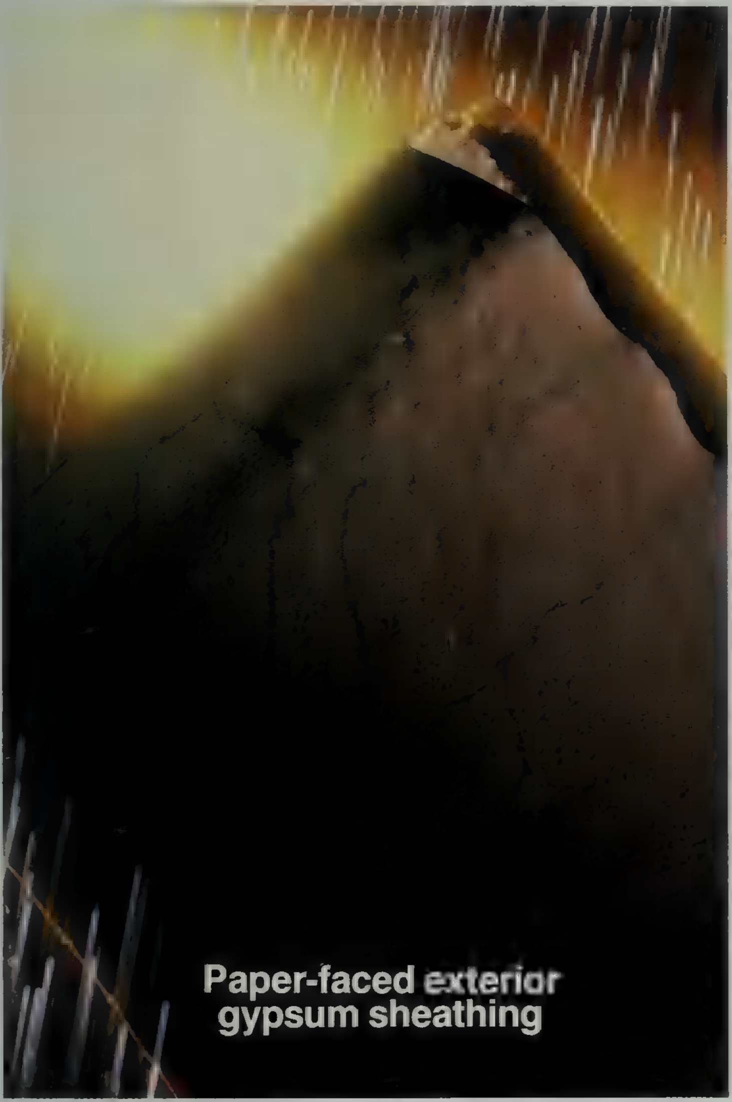
GAMBLE



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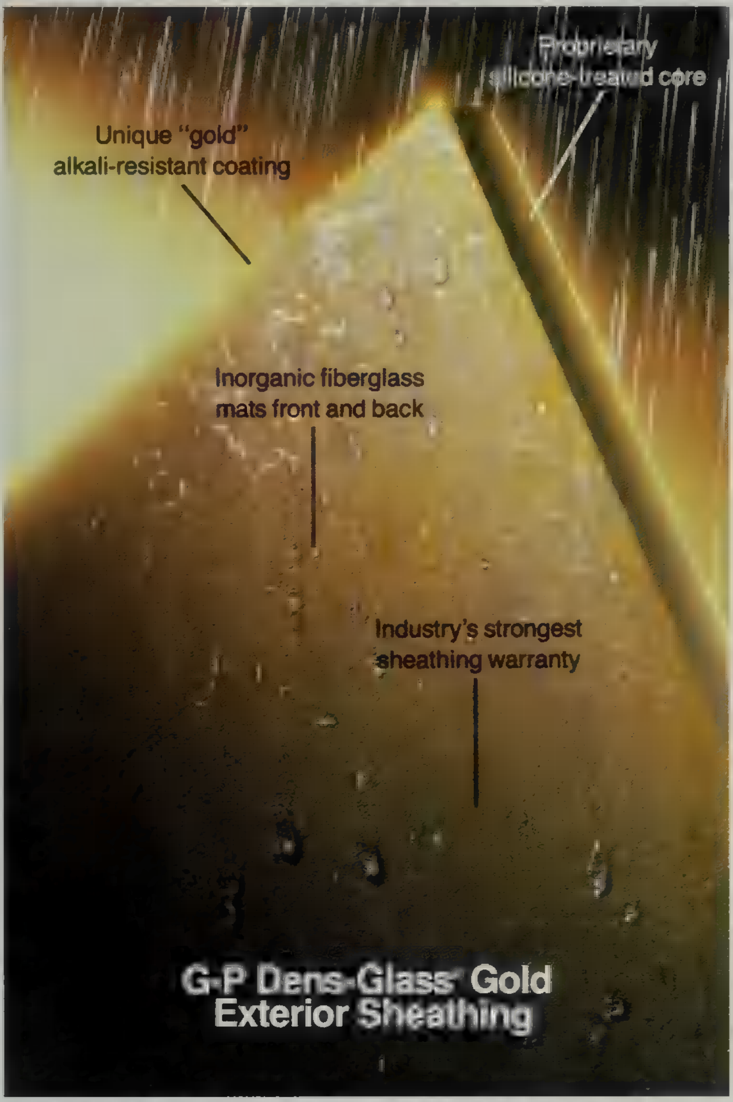
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face up	141	110[1]
face down	151	110[1]
Hardness, lbs. core	29	15[1]
end	25	15[1]
edge	41	15[1]
Water Absorption, % by weight	5.0	10.0[2]
Surface Water Absorption	.83	1.6
Humidified Deflection, inches	1/4"	10/8"
Flamespread	0	15

NOTE: Tests conducted in accordance with ASTM guidelines.

[1] Minimum requirements for ASTM C-79 standards specification.

[2] Maximum requirements for ASTM C-79 standards specification.

*For a free 20-page brochure including warranty information, specifications and physical properties, call Georgia-Pacific: **1-800-447-2882**, Operator #730. Look for us in Sweet's Section #09250 GEN.

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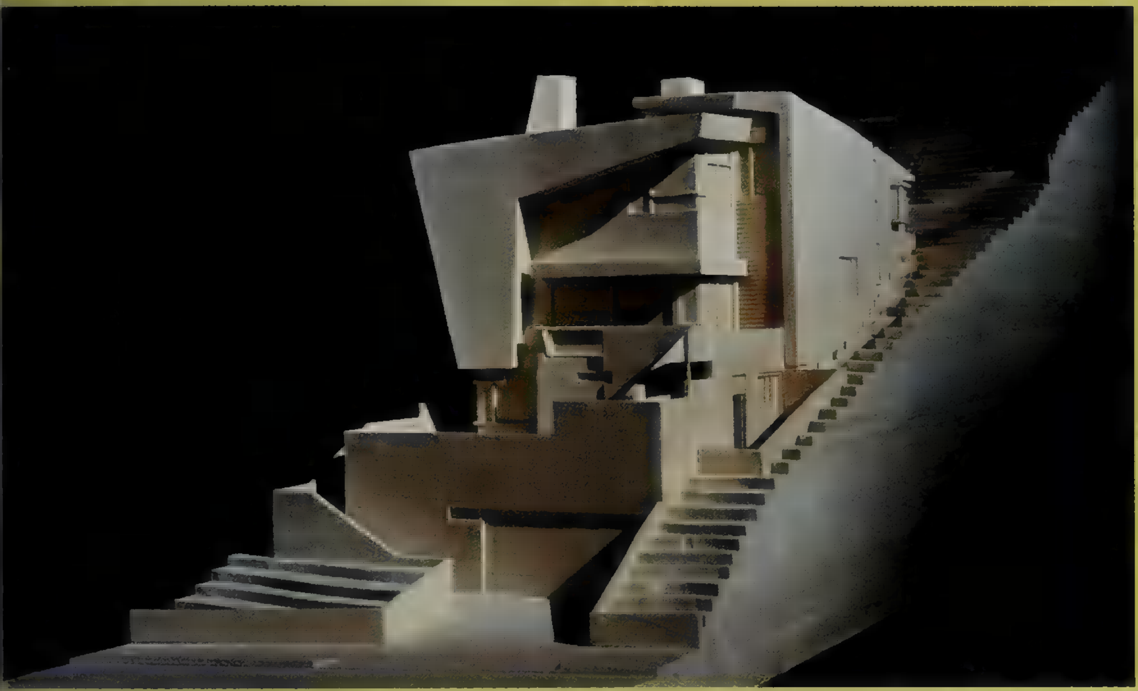
California

Oakland/Berkeley Rebuild After 1991 Firestorm That Destroyed 2,800 Houses



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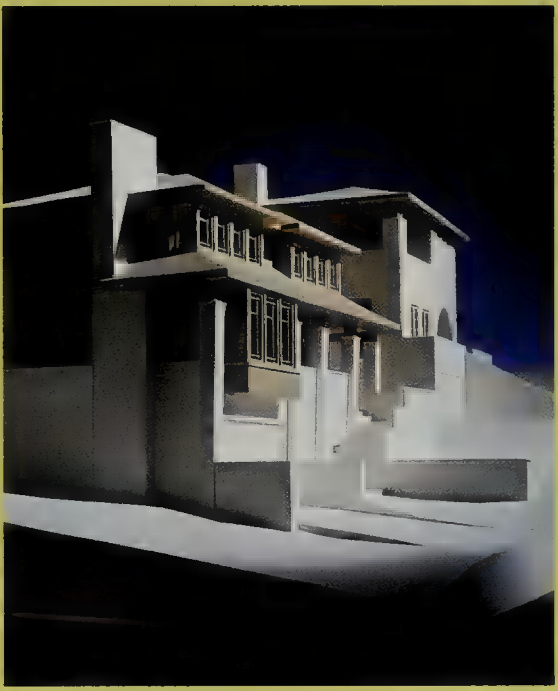

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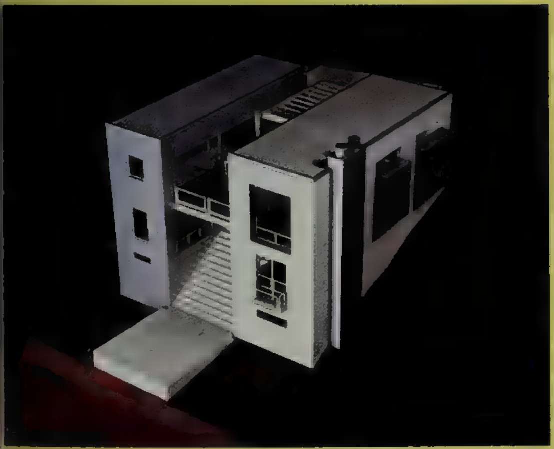
Russell Abraham photo



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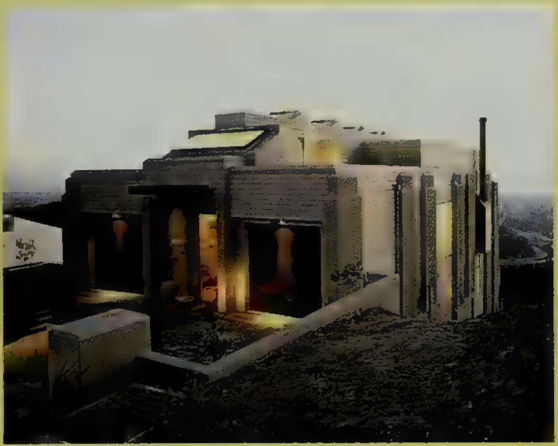

Richard Barnes photo

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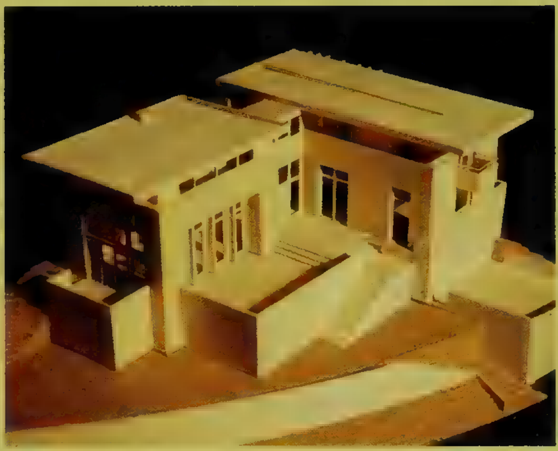


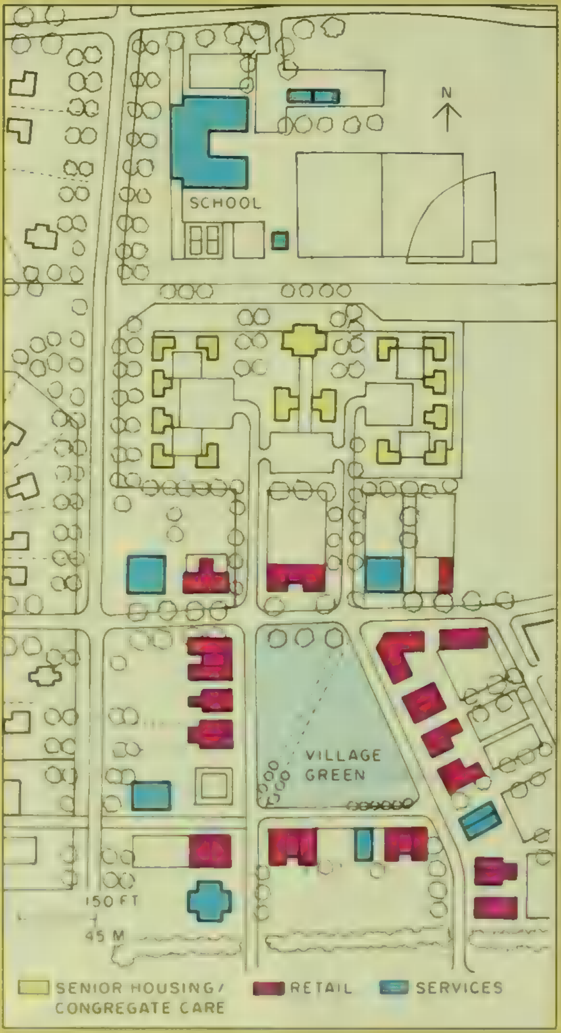
DeCredico/Sergent photo

5

Almost a year and a half has passed since fire raged through Berkeley/Oakland neighborhoods destroying nearly 2,800 dwelling units. Nature almost immediately began to reassert itself, but humans, plagued by slow insurance settlements, shifting regulatory requirements, and psychological unreadiness, have taken a little longer. To date, Oakland has issued 945 construction permits; 127 of these homes have been completed. An estimated 30 percent will sell their land and not rebuild. Most who are rebuilding chose to re-establish the familiar, erecting designs similar to their previous homes, although averaging 15 per cent larger. Others, however, had no desire to recreate the past, but took the opportunity to begin anew with the kind of houses they had always wanted. The Drager home (1), designed by Frank Israel, responds empathetically to its site, terracing up the hillside and attempting to sculpt itself into the terrain. The roof appears to slip away in a series of skylights and clerestories. Though heavily reliant on historical precedent in style, the Adcock/Barney house (2) by Swatt Architects is a single structure designed for two households and organized around a common yard. On a Modernist note, the Becker house (3) by Jim Jennings is two separate volumes connected by an outdoor bridge. The Siler house (4) by MacCracken Architects is a pillared fortress that splays itself outward from a center axis, embracing and framing the views below. Reflecting a Spanish heritage, the Goodin house (5) by DeCredico/Sergent is arranged around a courtyard, integrating the landscape into the house. *Pam Kinzie*

Planning Tackles Urban Villages, Rural Urbs, And the Carless Office District

1. The Buckhurst Fish Hutton Katz & Jacquemart plan for the 1,300-acre mixed-age Beavercreek Township east of Dayton, Ohio, places senior and congregate-care housing at the community hub within walking distance of retail village green, tennis courts, local transportation, and community services, including shared grade-school facilities. Single and low-rise multifamily units fan out from the hub shown here. Second-floor rental housing may top the retail. An inactive barn and an old brick schoolhouse will be retained for community use.
2. A Gruzen Samton Steinglass/Beyer Blinder Belle joint venture is completing design guidelines for Queens West, a New York City new town located in a residential/industrial area on 74.5 acres of underutilized Queens County shoreline. The master plan calls for 6,300 affordable and market-rate housing units, 2,350,000 sq ft of large-floor office space and hotel, 340,000 sq ft of retail and public space, 19 acres for recreation, and a continuous waterfront esplanade. Towers are narrow and spaced for the most transparent views to and from mid-Manhattan.
3. The Committee for the Seattle Commons, a large, energetic citizen group, believes an 85-acre park joining downtown to the Lake Union shore will attract the residential and business investment needed to turn 470 acres now heavily populated by parking lots into a walkable "urban village." (Opponents claim the scheme is unnecessary and designed to enrich a small group of property owners.) The urban-village proponents support tax-increment financing—not yet tested in state courts—for the $250-million system of meadows and streams, with a bridge loan until revitalization begins to generate taxes. The plan includes zoning and design standards, extensive housing rehab, mainly low-rise building, and landscaped shopping streets linking the Commons with other neighborhoods. With a $20-million line of credit, the group has been buying park-site properties at current depressed prices, and plans a fund to insure affordable housing.
4. Amsterdam is using new periphery garages, more public transportation, wider sidewalks, and thousands of traffic-stumping bollards, known locally as "amsterdammers," to gradually banish motor vehicles from its [illegible] historic downtown, home of [illegible] concentration of offices. ■



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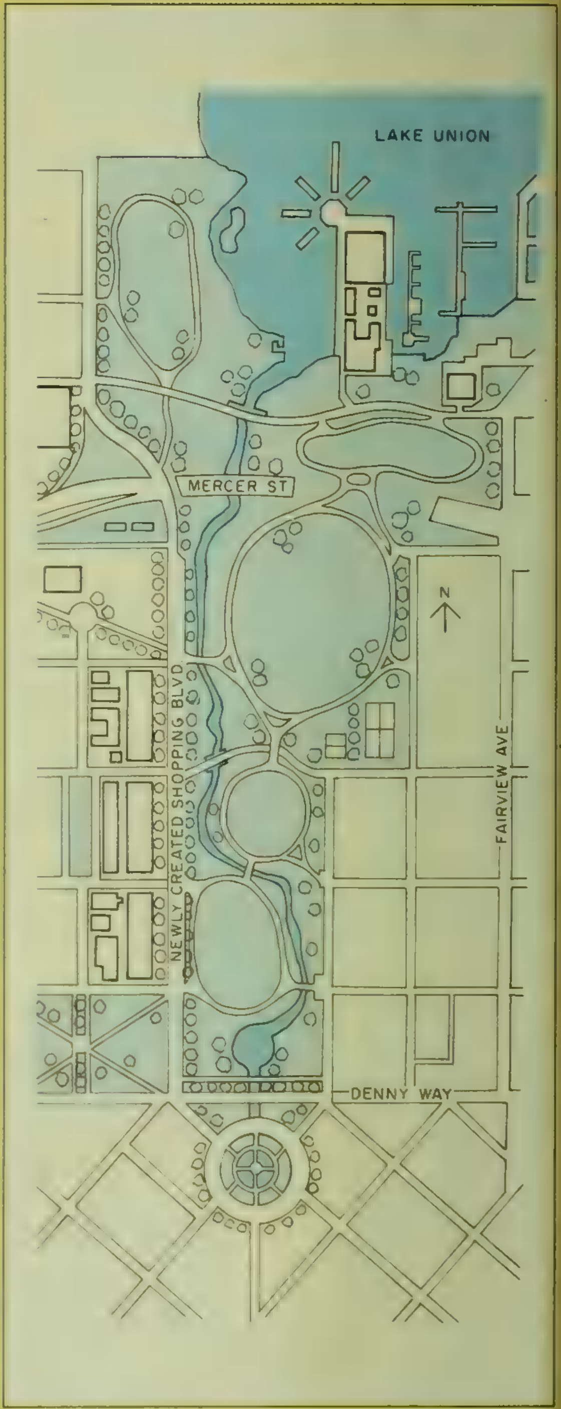

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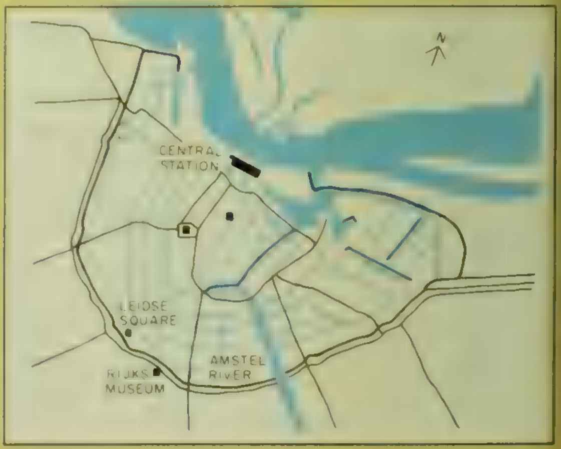

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Los Angeles

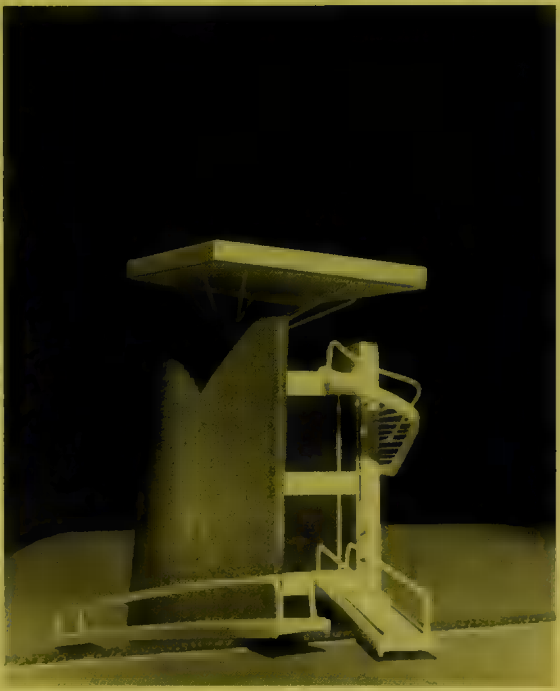
High House Masters All It Surveys

Construction begins this month on a 4,200-sq-ft residence by Edmund Einy on a height overlooking Santa Monica Bay. A movable glass-wall perimeter around a light-gauge steel structure on a 16-sq-ft grid blurs distinctions between outdoors and the open-plan interior. A bermed lawn and an upstairs screen wall provide street-side privacy, but a skylight the length of that side compensates for lost contact with the outdoors. ■

Connecticut

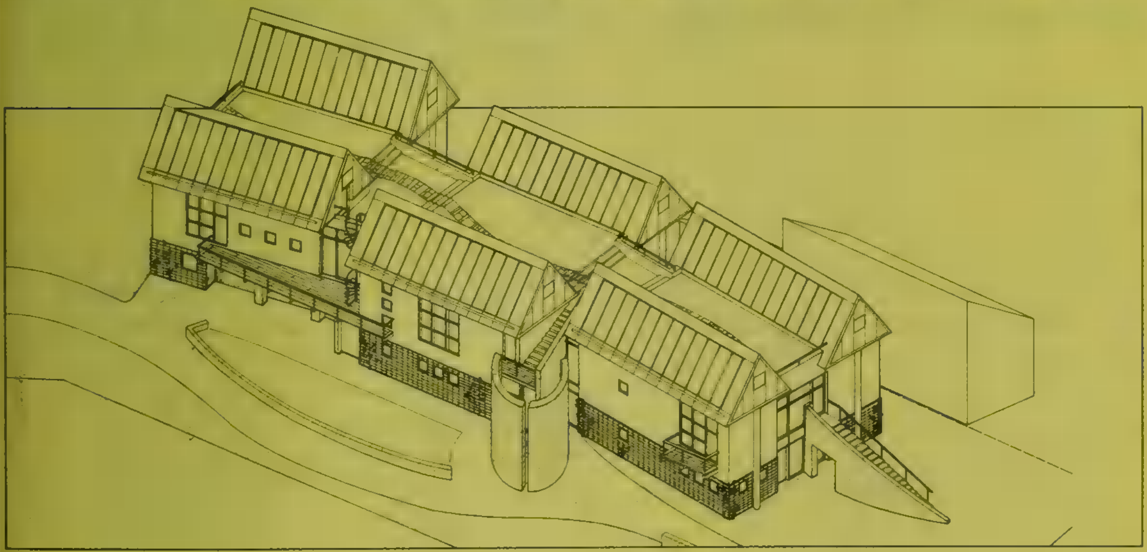
Philip Johnson Adds a New Folly To Glass House Estate

After his association with John Burgee ended in 1991, Philip Johnson, 86, opened a new office. His first building to be realized is a visitor's pavilion at his Glass House estate in New Canaan, which he willed, with a maintenance endowment, to the National Trust for Historic Preservation in 1986. The fragile privacy of the house, once protected by a fieldstone wall, gives way to a new public role, with this roadside tower serving as a beacon for visitors and affording views of the property from its upper floor. It joins a collection of architectural follies Johnson has built here over the past 45 years, including a study-library ("I can't work in a glass house," Johnson told RECORD in 1983. "There are too many squirrels running around outside."); a skylit triangular sculpture pavilion; and an underground picture gallery. *David Cohn*



Frankfurt

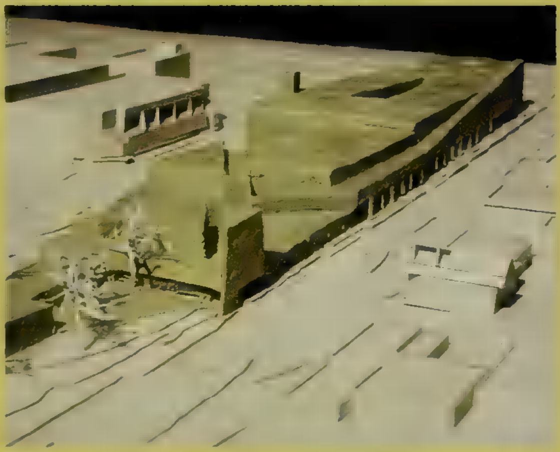
"Green" Machine With a Life of Its Own



Respect for the planet starts early in Germany, where William McDonough—whose "green" prophecies are just beginning to be heard in the U. S.—won an international day-care-center competition by proposing replacement of the machine-for-living with what he calls "a living machine" that works with sun and trees to channel and conserve energy. Current analysis indicates that the winning scheme of pitched roofs of super-insulating R-8 glass and photovoltaic energy collectors can generate enough energy for the building's year-round heat and hot-water needs. Children control glare with crank-operated shutters suspended from the roof ridges. Broadleaf trees close to the building help block heat during the most intense months, but let weak rays through bare branches in the winter. As needs change, the center can be broken into houses or apartments. Opening ceremonies will feature the donation of trees to the former East Germany; McDonough has already calculated that 10 acres will compensate the Earth for the energy embodied in the materials and construction of the day-care center. ■

Albuquerque

"Desire Lines" Cast in Stone

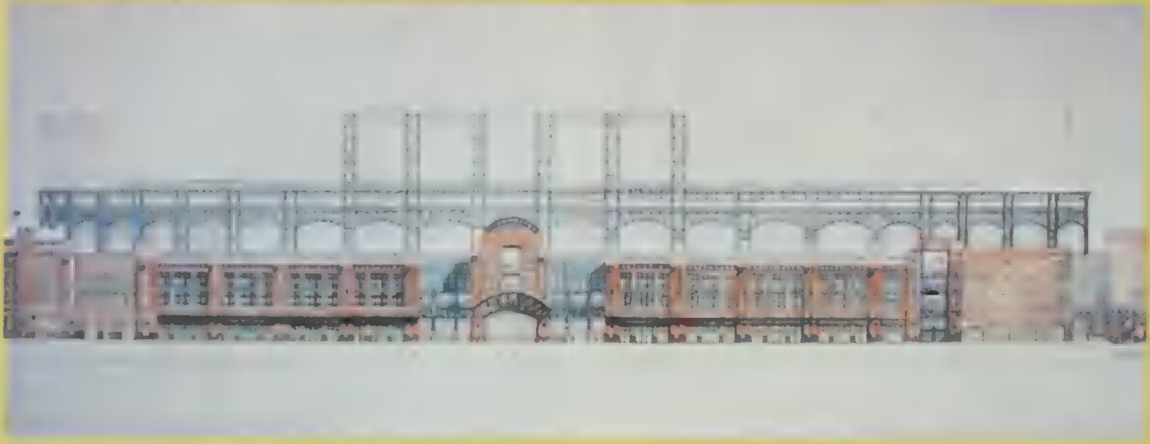


Even though 75 per cent of the 400,000-sq-ft bookstore/retail/parking structure at the University of New Mexico is devoted to the parking structure, Antoine Predock arranged the scheme to honor time-worn pedestrian "desire lines." The X-shape in the clay model above organizes the ad hoc footpaths that were established during the site's history as a parking lot, and carries the vitality of the city's main artery onto the campus. The exterior will be warm-toned exposed concrete, "with glass to make the skin sparkle at night," says Predock. ■

Denver

Field of Dreams for Colorado Fans

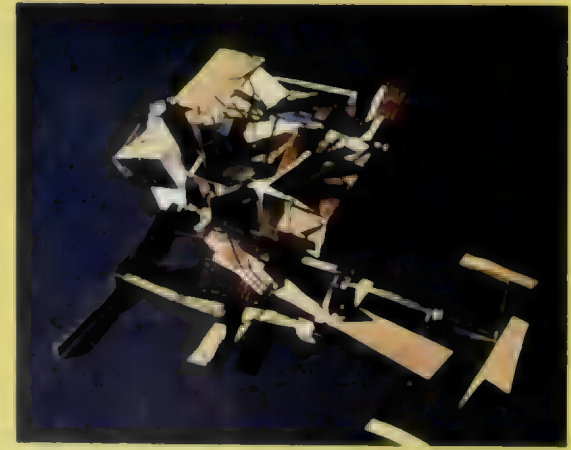
1992 Denver Metropolitan Major League Baseball Stadium District



Natural Colorado stone, brick, and lacy steel arches will greet baseball fans when Coors Field, the new home of the Colorado Rockies major-league team, opens for the 1995 season. HOK Sport designed the $141.5-million open-air stadium to recall intimate old-style ball parks—with modern amenities—and to be compatible with the nearby historic neighborhood. The 43,800 seats will be as close to the action as possible, and many fans will have views of the skyline and mountains.
David Ballast

The Netherlands

Museum-in-Canal Gets Guest Architect



Coop Himmelblau takes over design of the exhibit hall at the Groninger Museum of Art that was previously assigned to Frank Stella. Conceived by Mendini Milano to sit in the middle of a canal and feature the work of guest architects, the 16th-century-to-contemporary museum will also have exhibit halls by Philippe Starck and Michele De Lucchi. Coop Himmelblau's two-story por- [illegible] the unfolding of [illegible] stands on the [illegible] free-standing [illegible] under construction. ■

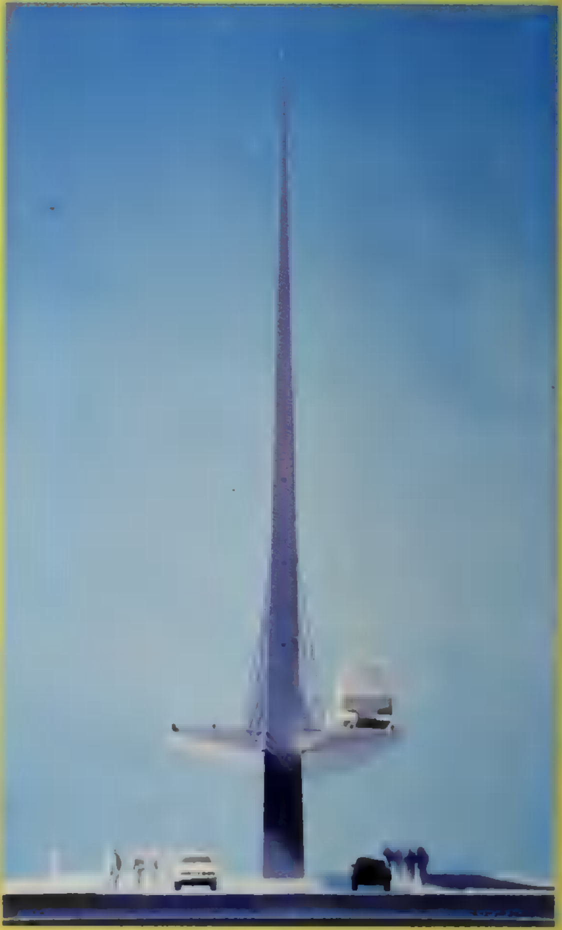
Russia

Moscow Architects Turn to the Dacha

Russian architects have penetrated a field that until now seldom employed even skilled builders—the *dacha* (country cottage). Yu. L. Galustyan, L. S. Gribova, and T. E. Iscoskova, use two external circular stairs to join the rotated floors of this five-person unit near a Moscow suburb. A diagonal roof ridge oriented to the corner stairs leads to asymmetric pentagonal slopes. Internal and external balconies, a rooftop solarium, and a glassed veranda complete a sophisticated organization of elements that appear not so much built as accreted over time. ■

France

A New "Lite" Rail Viaduct Formula



For a rapid-transit viaduct serving the city of Rennes, Sir Norman Foster and Partners jettisoned the traditional European railroad theme of massive columns and beams on uniform centers—the kind of bridge that used to speak of powerful engines and equally powerful owners striving to conquer nations and continents—in favor of a lighter, more elegant image bespeaking the ease with which a modern transportation system can slip through the urban environment. Developed with Ove Arup & Partners, this scheme is based on a kit of four parts: tall steel pylons, paired suspension cables, precast-concrete deck units, and steel torsion links to support and join the separated track structures and unite the concrete deck with the suspension cables. Decks for rail track are partially cantilevered off, and partially suspended from, either side of a slim central spine of pylons and cables. Daylight filters down through the split decks, while at night artificial light glows from beneath to give this gateway symbol of Rennes a drama akin to the Eiffel Tower. Construction should begin by 1996.
Judith Davidsen

Design

Briefs

Reichstag plans
As part of a likely German federal government move to Berlin, three first prizes were awarded for redesigns of the Reichstag, the former Parliament building. Per client request, Norman Foster and Santiago Calatrava enlarge the plenary hall inside the existing building; Pi de Bruijn puts it out front in a podium. Final design choice is expected this summer. Axel Schultes was chosen from 800 entries in the urban-planning competition for the Spreebogen, the new district around the Reichtstag. *Tracy Metz*

"All My Architecture"
The more operatic episodes in Frank Lloyd Wright's life inspired *Shining Brow,* an opera premiering April 21 in Madison, Wisconsin. Scenes include his elopement with a client's wife and his staff, self-described as slaves. Sets include his office, Taliesin, the Cliff Dweller's Club, a building site, and the Cheney house. Meanwhile, the Frank Lloyd Wright Building Conservancy in River Forest, Illinois, is listing Wright homes for sale; the Taliesin Preservation Commission bought his Spring Green Restaurant to use as a visitor center; and New York's Museum of Modern Art plans a show early in 1994.

African burial ground
New York's Landmarks Preservation Commission has created the African Burial Ground and Commons Historic District in the area where the remains of some 400 colonial-era African-Americans were found during building excavations over the last 18 months.

Competition
April 30 is the deadline for Urban Outhouse entries. Contact Vermont Structural Slate, 3 Prospect Street, Fair Haven, Vt. 05743.

Money, money, money. . .
The New York Landmarks Conservancy has $1.5 million in low-interest loans available for low-income areas. Call (212) 580-9548.

Award
Barton Myers Architect Inc. and Kuwabara Payne McKenna Blumberg Architects have won Canada's Governor General's Medal for Woodsworth College, University of Toronto.

Remembered

- George M. How of Kohn Pedersen Fox died of AIDS in February at age 35.
- Elizabeth Wood, a public-housing maverick, died in January at age 93.
- R. E. Alexander, former partner of Richard Neutra, died at 84 in November. ■

California

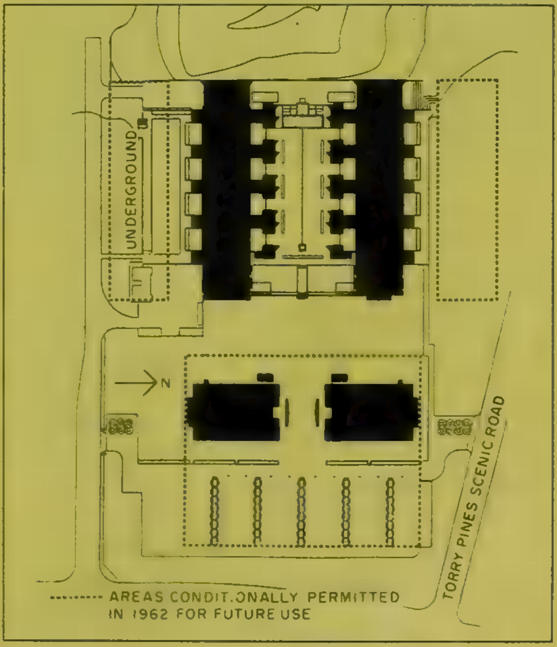
Post Office Rises in Community Under Renovation

A new 20,000-sq-ft central U. S. post office by Ratcliff Architects is under construction in Emeryville, a gentrifying San Francisco Bay community more given to renovating abandoned industrial structures for new uses than to building from scratch. The design responds to its surroundings with updated uses of corrugated metal and painted cement plaster, a curved standing-seam metal roof, and metal grilles and canopies. Skylights and clerestories draw natural light into customer-service areas. ■

California

Opponents Balk as Salk Announces New Scheme for Addition to Kahn Icon

The Salk Institute for Biological Studies plans to move its proposed laboratory/administrative addition back another 10 ft from Louis Kahn's 1965 complex. The Anshen & Allen design unveiled in September 1992 now sits 140 ft east of the original, but, says principal for design David Rinehart, still covers a third of the eucalyptus grove that makes the axis of Kahn's monumental court an unexpected discovery. Los Angeles Museum of Contemporary Art assistant director and opposition leader Sherri Geldin calls the sequence "absolutely fundamental to the experience." The new approach is between two two-story structures that mirror Kahn's split composition and materials, and through an abbreviated grove. Rinehart (who worked on the original with Kahn) says the mirroring of the main court will "prepare you for the experience" rather than "mimicking and devaluing it." The addition's form can still change, but probably not its placement. The institute can't afford to build on the expansion site Kahn originally chose south of the complex because it holds an underground structure, or to replace current parking with a multi-level structure. The Salk and its architects dismiss the Kahn choice directly north of the original as "inappropriate." Kahn collaborator Anne Griswold Tyng proposes a skewed building to preserve surprise in the entry sequence, but Salk will continue developing only the current plan. *Aaron Betsky*



New York City

AIA President Cites Clinton Support for Architects' Role

"I'm optimistic on getting the issues across to the new Administration," said Susan Maxman at RECORD's annual lunch to host the incoming AIA president. Revealing that she had had a 15-minute conversation with President Clinton the previous week, she described the President as very supportive of architects.

Her most pressing issue: sustainable design, the theme of this year's national AIA convention in Chicago in June. "It's more an attitude than a totality," she said. Nonetheless, she recently designed a building in which the annual energy savings will be substantial over conventional hvac systems. "Architects' preoccupation with copying styles [rather than paying attention to environmental considerations] has made the U. S. look all the same." An obvious by-product of sustainability will be regional diversity, she maintains. "Architects have the overall view, and, if they don't take the lead, there are plenty of others out there waiting to do it." Questioned on "the dichotomy between green and photogenic buildings," Maxman responded that it is a question of what people get accustomed to seeing. "Besides," she added, "we'll get better at it."

Maxman came to architecture relatively late in life, having first raised a family, and points out that her experience proves women can do whatever they strive toward. When questioned on why there are so many architects, she responded: "I am in favor of as many as possible, but they should be educated as generalists to do problem-solving. *C. K. H.*

California

Sending a New Message To Congress

A new type of stamp to help pay for social causes is the brainchild of a California architect. "America needs an attitude adjustment in the way people contribute to projects that we used to assume were paid for by taxes," says Peter Stevans, who already claims to be getting his agenda across to the new administration. His idea: semipostal stamps.

These exceptionally designed issues (see example above) have been used in Europe for some time. They carry a premium charge, which is used to fund programs that might otherwise go begging. He envisions public projects ranging from an International Visitor Center/Museum for the Golden Gate Bridge to housing the homeless.

Why have Americans been so slow? Quoting Postmaster General Anthony Frank, Stevans says: "The idea is generally submitted to his office five to 10 times a year, but gets lost quickly because the Postal Service is quite powerless to initiate a program without Congress's permission." This is not forthcoming, says Stevans, because "fundraising Congressional-lobby groups do not want slices into their domains."

He estimates that there are 40,000 post offices in the U. S., not to mention countless vending stations, making it "the largest chain store in the nation." He admits that makes for an extra bookkeeping problem for the postal service and suggests that 10 percent of stamp premiums be allotted to overhaul the system. "America needs some new ideas because our old ways are not as good as we think they are," he declares. *C. K. H.*

Washington, D. C.

ACEC and AIA Get Together

"Together, AIA and ACEC can re-establish the leadership of architects and engineers i the construction process," says AIA president Susan Maxman, referring to a joint statement from the two groups on mutual goals. With the help of RECORD contributin editor Peter Piven of the Coxe Group, the two organizations met in early March to produce the new document. Among its goals: firm quality, not low fees, as the basis for procurement of professionsl services, joint business-practice services, and improved quality *and* profitability. ■

Texas

Pine Springs Cafe, 2 Park Service, 0

A 61-year-old cafe has twice been the target of the Park Service's efforts to get it out of Texas's Guadalupe Mountains National Park created in 1966. First the service offered to buy the site, but Bertha and Walter Glover, who started the cafe, refused to sell. Instead they won a $55,000 settlement and the right to stay for life. The last Glover died in 1982, leaving the property to their daughter Mary Hinson. First, Secretary of the Interior James Watt intervened when the service tried to evict her; then Secretary Donald Hodel followed suit. Now the service is at it again, claiming that hazardous gasoline storage and deteriorated buildings are a hazard. "We never had anyone tell us we were doing anything wrong," claims Hinson. ■

Briefs

No misrepresentations in North Carolina. "An architect who has been an employee of another architectural practice may not claim unconditional credit for projects contracted for in the name of the previous employer," says a new amendment to the *North Carolina Board of Architects Laws and Regulations.* As a sign of the times there, the state board of architecture notes that some 150 corporations registered in the state are past due on renewals.

The band plays on in New York City. Upholding a lower court decision, the Appellate Division of State Supreme Court has ruled unanimously that the city cannot demolish the Naumburg Bandshell [RECORD, April 1992, page 32] because the city administrative code forbids destruction of a gift. The Beaux-Arts limestone structure was donated by banker Elkan Naumberg in 1923 and was recently the target for removal by a private fund-raising group that claimed it was in the way of restoring parts of Central Park to its 1859 Olmstead and Vaux plan. "This may not be the end of it," Marjorie Cadogan, counsel for the city's Department of Parks and Recreation, says ominously.

Surviving inquiries in Georgia. SCAD, the Savannah College of Art and Design, was the site of both student and faculty unrest last year, including a bomb blast that cancelled graduation. At the heart of the problem was contention between some former trustees and the school president and provost. Teachers loyal to the school termed the situation "growing pains," and apparently both the National Architectural Accrediting Board and the Southern Association of Colleges and Schools agreed. They continued the school's accreditation.

Marketing with a hammer and saw in Chicago. Architect Jerome Cerny didn't wait around for residential clients to knock on his door. Instead, he built a 6,300 square-foot "Idea House," with which he hopes to inspire new commissions. Like builders' models, it sits open for public inspection of "the latest in products, amenities, and construction techniques."

Location, location, location, and price in California. "The most successful builders in '93 and beyond will be those that focus on the most desirable neighborhoods—and offer the most affordable houses in them," claims Ralph Lewis of Lewis Homes, predicting a reversal of the recent trend to build bigger and bigger houses in most upscale neighborhoods. The tack seems to be working for the California builder, which, unlike many rivals, claims 1992 was a banner year.

Marketing new realities in Florida. Citing a break with interior designers' tradition of starting new projects from scratch, South Florida designer Zeni Habif claims to market austerity with a mix of existing and new furniture. "Maybe add only one or two new pieces for an exciting fresh look," she says.

Prompt pay in California. The California Council of AIA is sponsoring a bill in the state legislature that would require public and private owners to pay within 30 days of billings or face interest penalties. In turn, architects would be required to release monies owed subconsultants within 15 days of client payment. Another bill being sponsored by the council would strengthen requirements to hire women and minorities.

Blossoming in Tokyo. Architects casting eyes towards Japanese markets include more than those who design buildings. A large U. S. landscape-architecture firm, Peridian, is opening a branch in offices it will share initially with Japanese landscape architects TLA, with which it has worked on individual projects before. It will share more than space. The more than 100 employees of TLA will also be available to work on Peridian projects, which currently include master planning for a new town. *C. K. H.*

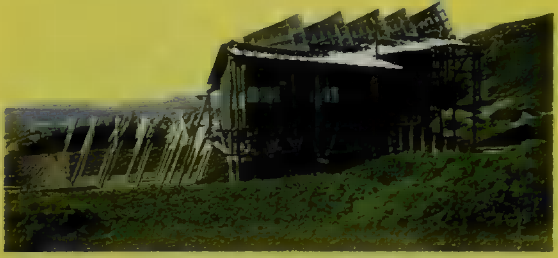
New Haven, Connecticut

Poor Overlooked at Yale Conference

"Architects are used to working for the rich, not the poor," sums up New Haven architect Felix Drury after attending a January Yale Conference on Housing. "It was easy to see that most conferees were only looking at the wounded body of [the poor's] housing at arm's length to see if sophisticated design could cure it. A complementary exhibit of 'innovative housing' culled from a nationwide solicitation was sometimes quirky and individualistic—'This [house] is for a retired championship boxer and his wife who designs puppets.' It would have been much more promising if the participants had attended the Connecticut Housing Coalition's conference two days earlier." There, says Drury, they would have met the people who sponsor and find funds for housing, identify needs, and work out support programs—the clients for the housing architects of tomorrow. ■

Chile

If All Else Fails



A group of Chilean architecture professors are avoiding the pitfalls of practice and working off their creative urges by building their own houses in Cooperativa Amereida on the Pacific Coast near Punta Piedra, reports traveling Fulbright scholar Dennis Fukai. The cooperative is 20 years old and contains 13 houses in various states of evolution and styles, ranging from *Road Warrior* (casual constructions of seemingly found spiky objects) to low-tech (an inverted ship-shaped hull with a translucent-canvas and stick-truss roof) to subterranean. ■

Restoration

Second Move for Wright Landmark

The Pope-Leighey House, a National Trust for Historic Preservation property, is awaiting its second move and restoration. Originally built in Falls Church, Virginia, it is a 1941 "Usonian" that Frank Lloyd Wright built for Americans of modest means. Among its innovations are radiant heating in the concrete-slab floor and sandwich-panel wall construction.

The house was first moved hurriedly (in 1965) out of the path of Interstate 66, and some of the structure's current problems (especially differential settlement) may be attributable to soil conditions on its current site—on Mount Vernon's Woodlawn Plantation—according to restoration architect Cheryl Jacobs, of Quinn/Evans Architects in Washington D. C. Quinn/Evans proposes to dismantle the house and reconstruct it 25 ft northwest of its current location, correcting deficiencies that led to roof sagging and wall bowing. The work will include improved conventional foundations, new brick closer to that selected by Wright, and recontouring the site to match the original. Insulation, supplemental ventilation and humidity control, fire detection and suppression, and security systems will be concealed.

The National Trust continues to seek contributions toward the restoration's $550,000 cost (Linda Goldstein, Director, National Trust, 703/780-4000). *Naji Al-Hasani*

[illegible] Schramm

Metric Update

Conversion: The Hard and Soft Way

METRIC CONVERSION FACTORS (Approximate)

Symbol	When You Know Number of	Multiply By	To Find Number of	Symbol
		LENGTH		
in	inches	2.54 (exact)	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
		AREA		
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
		WEIGHT (mass)		
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 pounds)	0.9	metric tons	t

While most federal agencies have agreed to convert to metric (SI) units for construction by January 1994, conversion in the private sector will likely be slower. Robert Osborn of Leo A. Daly, an A/E in Washington, D. C., said that the firm's private-sector work remains entirely in "English" units even though 30 to 40 percent of their jobs are for the federal government and done in metric. He anticipates that private industry will take years to adopt metrication. Bill Brenner, executive director of the National Institute of Building Sciences (NIBS)—whose Construction Metrication Council is overseeing the metric conversion of the construction industry for the federal government—said metrication would be in full effect 10 to 15 years from now. Some private companies, especially those with significant international operations, have, however, rapidly adopted metric.

Though private industry is concerned about costs, Brenner claims they are minimal. "There are a number of pilot programs underway, particularly in the Philadelphia area, that are currently being built in metric," he says, and GSA has so far found no increase in the costs of construction or design. "Most measurements are fairly easy to convert into metric," he says. "And with the new CAD systems, to which contractors now have access, this shouldn't be a terribly difficult accomplishment." General Motors' conversion cost less than one percent of original estimates, according to the Council.

Metrication will penetrate construction in two phases: "soft," which means relabeling existing dimensions in SI, and "hard," which will require changes in modular components to rounded-off metric units. According to NIBS, 95 percent of all construction products will not change size because they are not modular or panelized. A 2 3/4 by 4 1/2-in. wall-switch face plate, for example, will be relabeled 70 by 115 mm; a 30-gal tank, 114 L. Surprisingly few components will be affected by hard conversion: a 6 ft-8 in.-high door will be 2,000 mm—only about one-tenth in. difference. Stud spacings at 16 in. and 24 in. will adjust slightly; concrete masonry units will, however, come in somewhat different metric sizes. *N. A.-H.*

Trade Center Blast

Systems Failed in Attack

The February 26 explosion that rocked New York City's World Trade Center raised new questions about supposedly redundant life-safety systems in tall buildings.

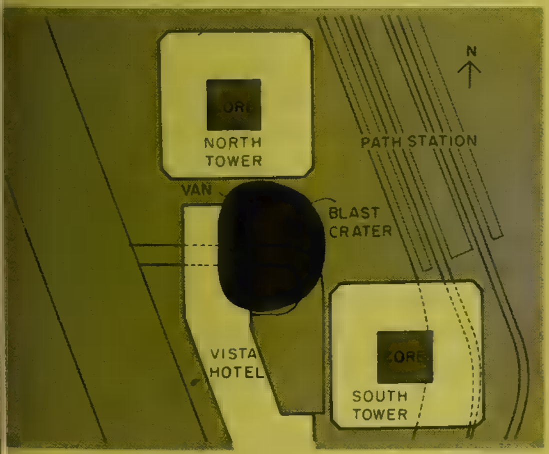
The explosives-laden van was parked close to the 12-million-sq-ft complex's only emergency-command center. The explosion damaged the center and cut off the emergency-communications system. "This really hurt us," commented Paul Marchese, the Center's chief of planning and design.

The collapse of two floor levels in the underground garage broke primary water pipes which flooded emergency generators.

The blast cut off five of the eight primary electrical feeders. According to the Port Authority of New York and New Jersey (the center's owner), the remaining feeders were adequate to power elevators, emergency ighting, and equipment, but fire-department officials required a complete power shutoff to reduce the risk of fires or explosions.

The explosion's power breached the fire wall separating the garage from the North tower and elevator-shaft walls within the tower. With ventilation systems off, the stack effect immediately drew smoke up elevator and exit-stair shafts. "We had an almost instantaneous smoke condition on the 101st floor," reported Marchese.

This "domino effect" of system failures has happened before, most recently at the One Meridien Plaza Fire in Philadelphia, where emergency power was cut off and pumps supplying standpipes failed. There was little spread of fire after the bomb exploded at the World Trade Center, but the disaster will rekindle the debate on whether complex detection and suppression systems can be used instead of fire-resistive construction and compartmentalization [RECORD, February 1992, pages 36-39].



The complexity of the systems also delayed reoccupancy of the buildings. Because soot interferes with operation, for example, workers have cleaned and examined every one of the building's thousands of smoke detectors. The center's refrigeration plant, beneath the bombed area, was covered with debris and may not be repaired until late spring.

On the other hand, some things worked. Using fire marshals designated from among tenants and following drilled plans, the building evacuation was orderly and panic-free despite smoke and lack of lighting in stairs. Also, the buildings' primary structure was virtually undamaged. "The heavy columns created a kind of shield," says Leslie Robertson, a structural engineer who was on the original design team and who has been retained for remedial structural work. Though the blast has been described as "the largest nonmilitary, nonindustrial bomb," the garage's primary structure did not collapse, though many columns lost two levels of horizontal support. The damage outside the garage structure is virtually invisible.

Among proposals in a 1985 report analyzing the center's security was that the garage be closed to the public and that the operations center be supplied with additional backup. The Port Authority had planned but not implemented additional system backup, and rejected closing the garage. Now, reflects Robertson, "owners of big buildings—especially with parking inside—are certainly searching their souls." *J. S. R.*

Bridge Design

St. Paul's Collaborative Edge

The Wabasha Bridge, a replacement project in a high-visibility location, is a prototype of the kind of architect-artist-engineer collaboration envisioned by recent highway-funding legislation. The design places a cable-stayed central V-mast on a mid-river island. The mast splits the 1,200-ft deck, supports a central pedestrian path, and accommodates a bend in the roadway. The bridge is a collaboration of sculptor James Carpenter's Design Studio (he blurs the line betweeen art and architecture), engineer Jorg Schlaich, of Stuttgart, Darrel Berkowitz of TKDA Engineers (St. Paul) and Sverdrup Corporation (St. Louis). Carpenter was unanimously chosen by the Wabasha Street Bridge Task Force after an international competition followed by a local public forum. The design is controversial, mainly due to its $32-million cost, though most funding is supposed to come from federal sources. The team is already at work on two alternates that are both less dramatic and less costly. The bridge can play, says a local commentator, "a vital role in the city's definition of its future." Officials will have to decide what that's worth. *N. A.-H.*

David Sundberg

Good Sound for "Bad Animals"

© *Grant Ramaly photos*

Canted and sloped shapes diffuse sound and prevent unwanted flutter echoes within the main studio.

In the control room, acoustical absorption, reflection, and diffusion devices focus sound symmetrically.

There is nothing like the sweet spot. That is where the engineer or producer sits when directing a recording session. At the Bad Animals Recording Studio it is located in the middle of the control room. It's the focal point of speakers embedded in a concrete wall in front of the engineer who sits at the center of a sound board with more controls than you are likely to see at NASA's Mission Control. Everything in the room, from the elaborate, sand-filled bass traps to striated walls known as Helmholtz resonators, is geared to creating a perfect balance of frequencies and tonalities at that one spot. The effect is an astonishing sense that the music has been liberated from the instruments, gaining a presence all its own.

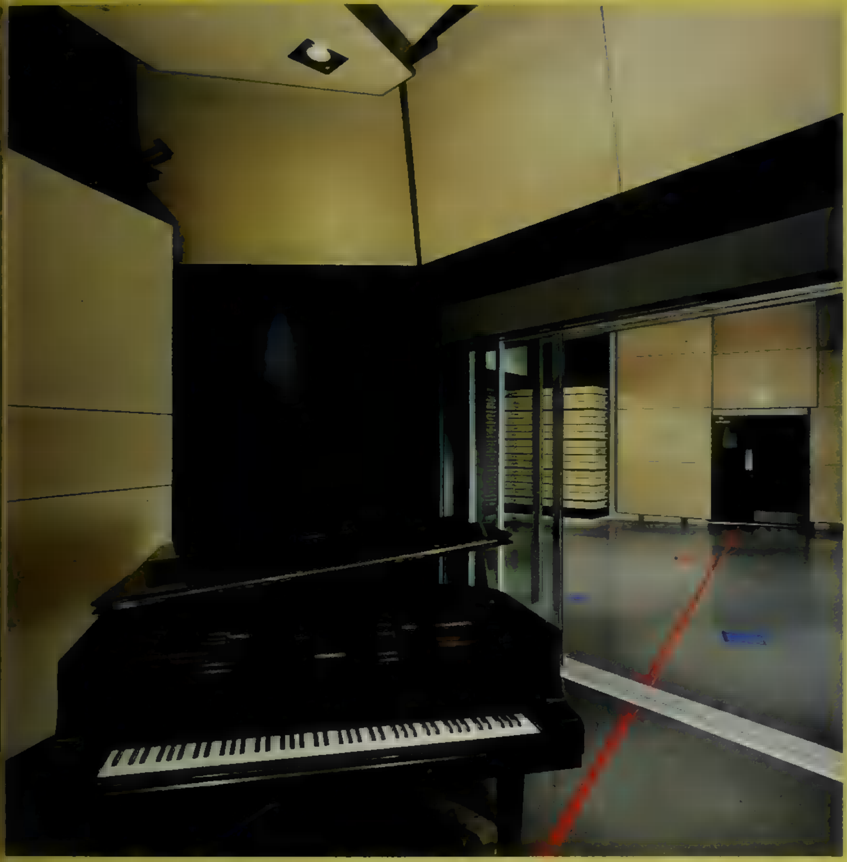
Creating such a spot is expensive. Leapfrogging technology has not only made consumer equipment hugely more sensitive, it has changed the way music is composed and produced. Though architects are rare in this specialized milieu, three of them lead Studio Bau:ton. George Newburn and Peter Maurer worked for the Waterland Group, one of the most successful designers of studio spaces in the country. Gruneisen, who is Swiss, credits his training at the Technical College in Thun for his ability to master and keep up with the complicated technology that is at the heart of their craft. Newburn, Maurer, and Gruneisen met at Southern California Institute of Architecture (SCI-Arc) five years ago. They took the school's esthetic of layered and fractured forms and, says Gruenison, "learned [our craft] on the job, and by going to lots of trade shows."

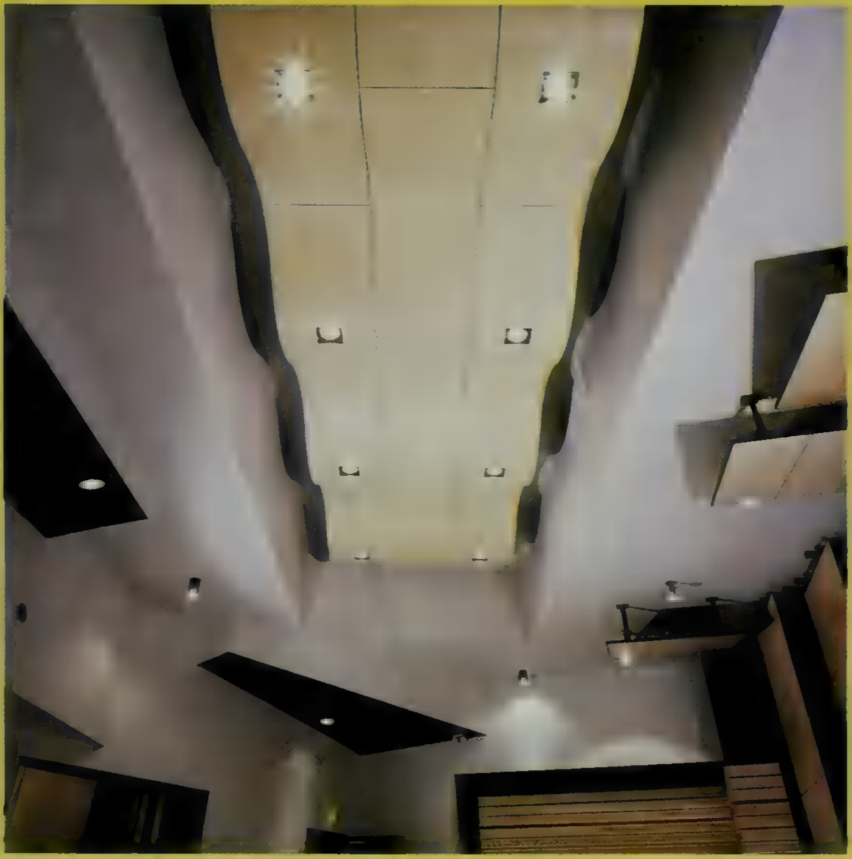
Bad Animals is the firm's best example to date of their marriage of technology and architecture. Housed in an anonymous brick warehouse building just outside Seattle's downtown, this former video recording studio is now the home base for the rock group Heart. Clients Ann and Nancy Wilson, in collaboration with producer Steve Lawson, asked for a "live" space (meaning one where sounds take as long as possible to decay) suited to their folk-based music, but that could also be rented out to other musicians. What they got was what Lawson calls "an extraordinarily bright and crisp space" yet one with the flexibility to host such diverse artists as the Seattle Symphony and the Georgia rock group R. E. M. The 5,000-square-foot facility contains not only a 25,000-cubic-foot recording studio and a control room, but also a separate taping room, isolation booths, and the kind of artist's lounge that, says Lawson, "is where these people really live when they are spending two months recording an album."

Isolating the studio

"The task in making a good space for recording music," explains Gruneisen, "is first of all to get rid of all excess sound, both inside and out." That means completely isolating the spaces where music is made or recorded (from each other as well as from sounds entering from outside), and building into each space a series of architectural devices that "trap" (meaning eliminate) and evenly diffuse sound waves. "This has become especially important now that most music is digitally edited (even when recorded on magnetic tape), because you can hear

The work of Studio Bau:ton shows what architecture can contribute to a specialized, technology-driven building type.


For individual instruments, the piano booth provides acoustics that are similar to the main studio but more controlled.


A sine wave of maple plywood breaks up higher frequencies; a layer of fiberglass behind it traps lower frequencies.

frequencies that you never could before," Gruneisen says.

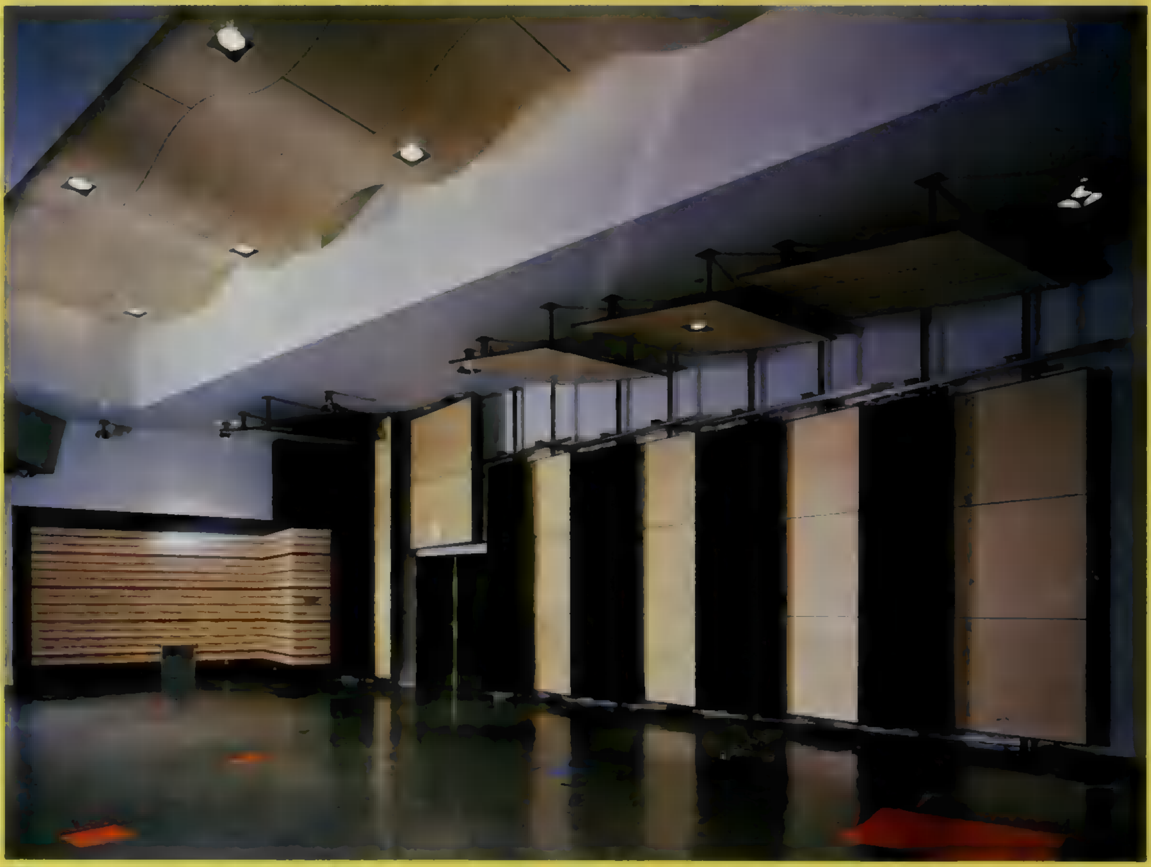
Isolating sound begins with the floor. Typically the firm pours two concrete slabs, the lower containing chases for wiring, and a 4- to 6-in. finish slab separated for damping by up to 2 in. of rubber or foamed-plastic board. The Bad Animals studio needed only the upper slab, floating on a 1-in. layer of Styrofoam. The main studio, control room, piano booth, and isolation booth each has its own separate stud-wall acoustical shells which rest on the slabs over continuous strips of 1/2-in. rubber. The control room has an additional inner wall of acoustical treatment (plan page 35). The stud walls are faced with laminations of drywall, acoustically rated soundboard, and 1/2-in. plywood. To complete each shell, the architects mounted the ceilings on the new walls rather than suspending them from the structural frame. Components attach to the building envelope only through rubber or neoprene gaskets. "You don't want anything to touch—even one nail or one screw can set the whole wall reverberating," says Gruneisen. The isolating effect works both ways: no exterior noise penetrates the space, and a session in full swing is inaudible outside the studio.

Achieving the desired sound

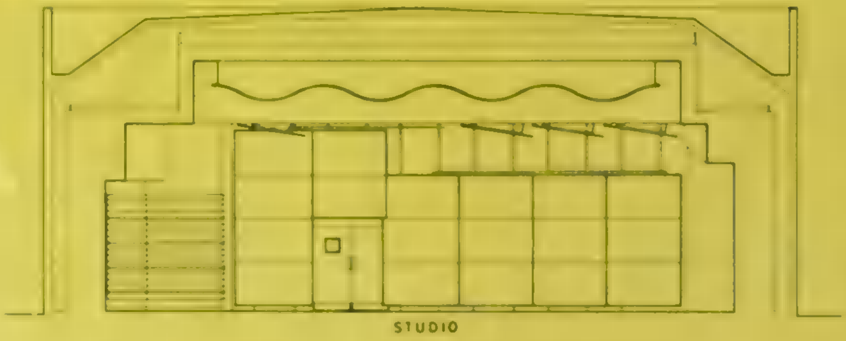
Once they have created an acoustically independent environment, the architects then have to make sure that the sounds produced in the room are clear and precise. That means getting rid of both "standing waves" and "flutter," reverberation phenomena caused when sound waves either bounce back and forth between parallel walls—canceling each other out—or accumulate in certain areas. The bulging, canted, and angled forms visible within the studio are stylish but functional. Surfaces at least 6 deg out of alignment from any other and corners greater than 90 deg diffuse a wide range of frequencies (opposite left). The undulating maple deflection panel—the "sound wave" in the ceiling—breaks up vertical symmetry, and conceals a mass of fiberglass insulation that traps unwanted bass (low-frequency) noise (top right). Similar bass traps of fiberglass are concealed behind plywood panels throughout the room.

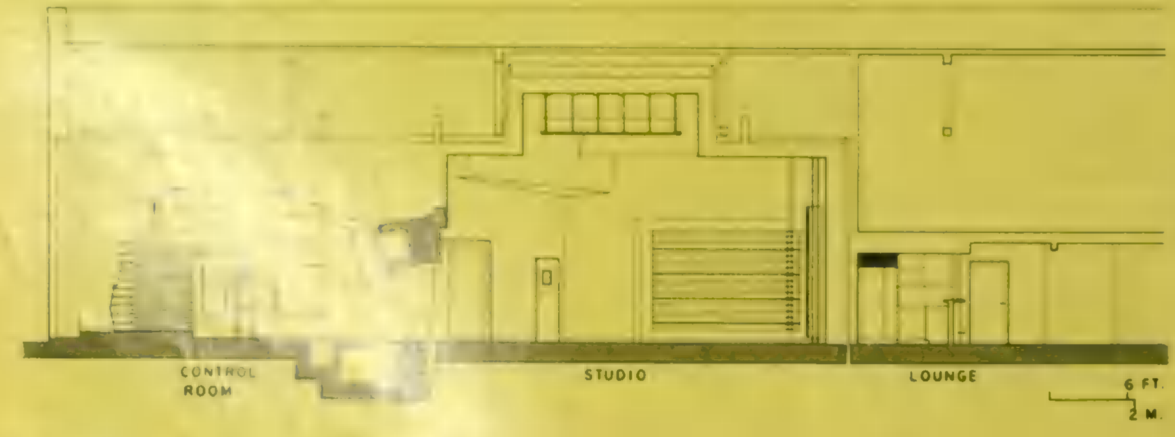
Two corners contain Helmholtz resonators. These are stacks of slats split down the middle with narrow openings. A mathematical formula determines the spacing of the slats and the size of the openings so that the designers can "tune" the room, creating the desired reverberation time. In the studio, the maximum reverberation is 1.8 seconds. The architects take pride in their "low-tech tuning device"—a set of heavy stage curtains that can be pulled across plywood panels—that further absorb the sound (next page). The acoustical qualities are flexible enough that the space is used to record rock, jazz, and classical music.

Acoustics is not only a science, of course. Lawson describes the sound in the studio as "bright" and "hard" because that is what most rock recording artists prefer. For a shorter reverberation time, Studio Bau:ton provided two separate isolation booths. One



The reverberation time of the room can be altered by pulling out theater curtains, here shown in the half-open position.





is used mainly for voice recording, while a larger piano booth creates a more controlled version of the ambiance of the main room, achieved by lining most of its interior with maple-plywood panels. A large, double-glazed, sliding glass door lets the musician look into the main room.

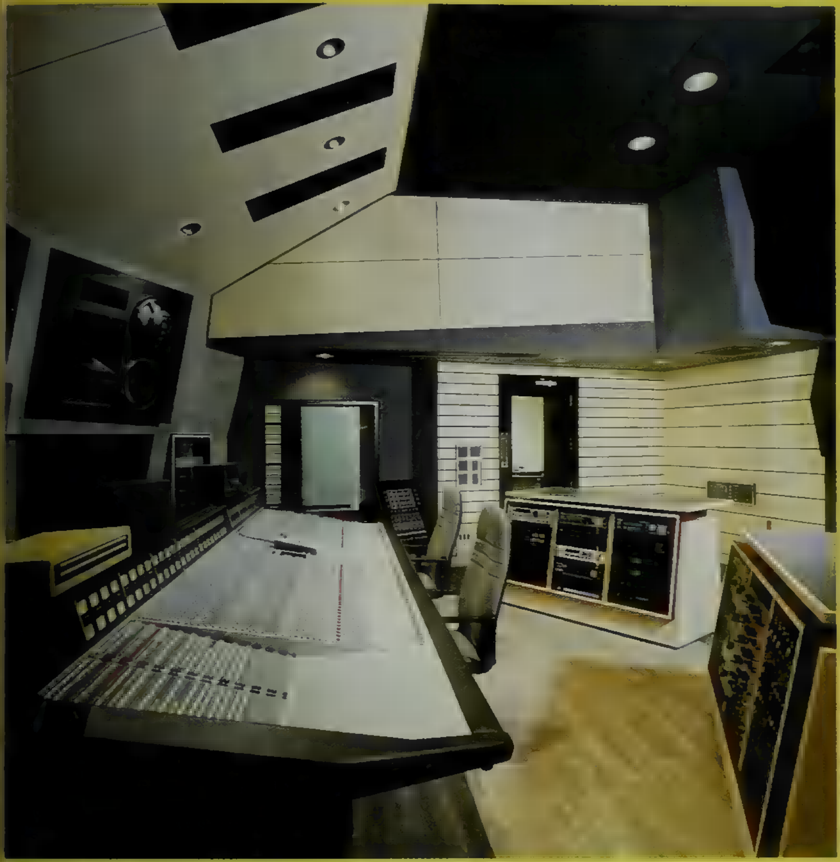
A "wood-paneled spaceship"

The control room is outfitted with Helmholtz resonators, angled corners, and bass traps (including one that is a sand-filled trench in the floor). Here, however, everything is symmetrically focused on the sweet spot (opposite). A massive concrete frame between booth and studio supports television monitors and speakers, minimizing feedback (top right and toned in plan below). The large speakers are custom made and look impressive, but Gruneisen points out that engineers will also verify the mix by placing in the room "speakers that sound more like what you and I will hear in our cars or in our living rooms." A 3/4-in.-thick sheet of glass on the control room side, and a 1/2-in. thick sheet on the studio side allow the engineers to see the studio space; television monitors permit soundtrack mixing for film and video.

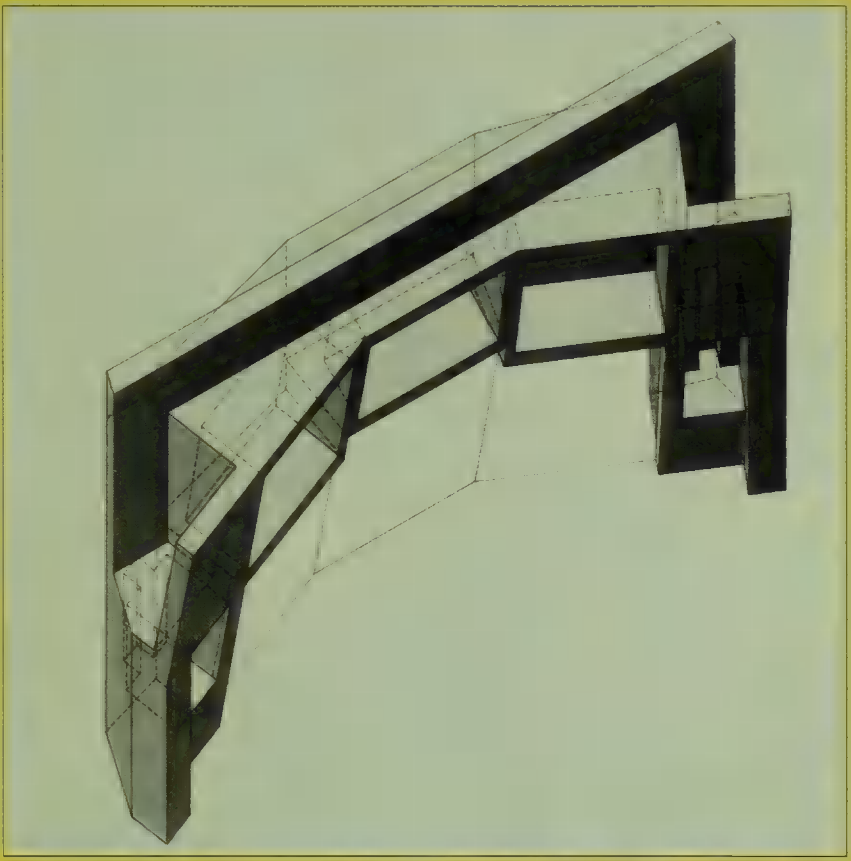
With architectural treatments that diffuse, absorb, and reflect sound and the massive amount of electronic gear, the control room is like a wood-panelled space ship. The architects had no control over the design of the 20-ft long sound board (used for mixing the relative intensity of voices and instruments), nor any of the playback devices, editing machines, speakers, and other electronic ephemera that fills the room, but they have made all this equipment easily accessible by placing much of it in arm's reach or on carts.

Since recording studios need wood for its acoustical properties, they're typically done in what Gruneisen calls "that woodsy, '70s cabin look." Studio Bau:ton has updated rather than abandoning that palette of materials, giving it a cleaner, crisper appearance, less at odds with the technology it contains. Gruneisen does not claim that the studio's expressive forms are completely defined by acoustical needs. Rather, "architecture and acoustics go hand in hand."
Aaron Betsky

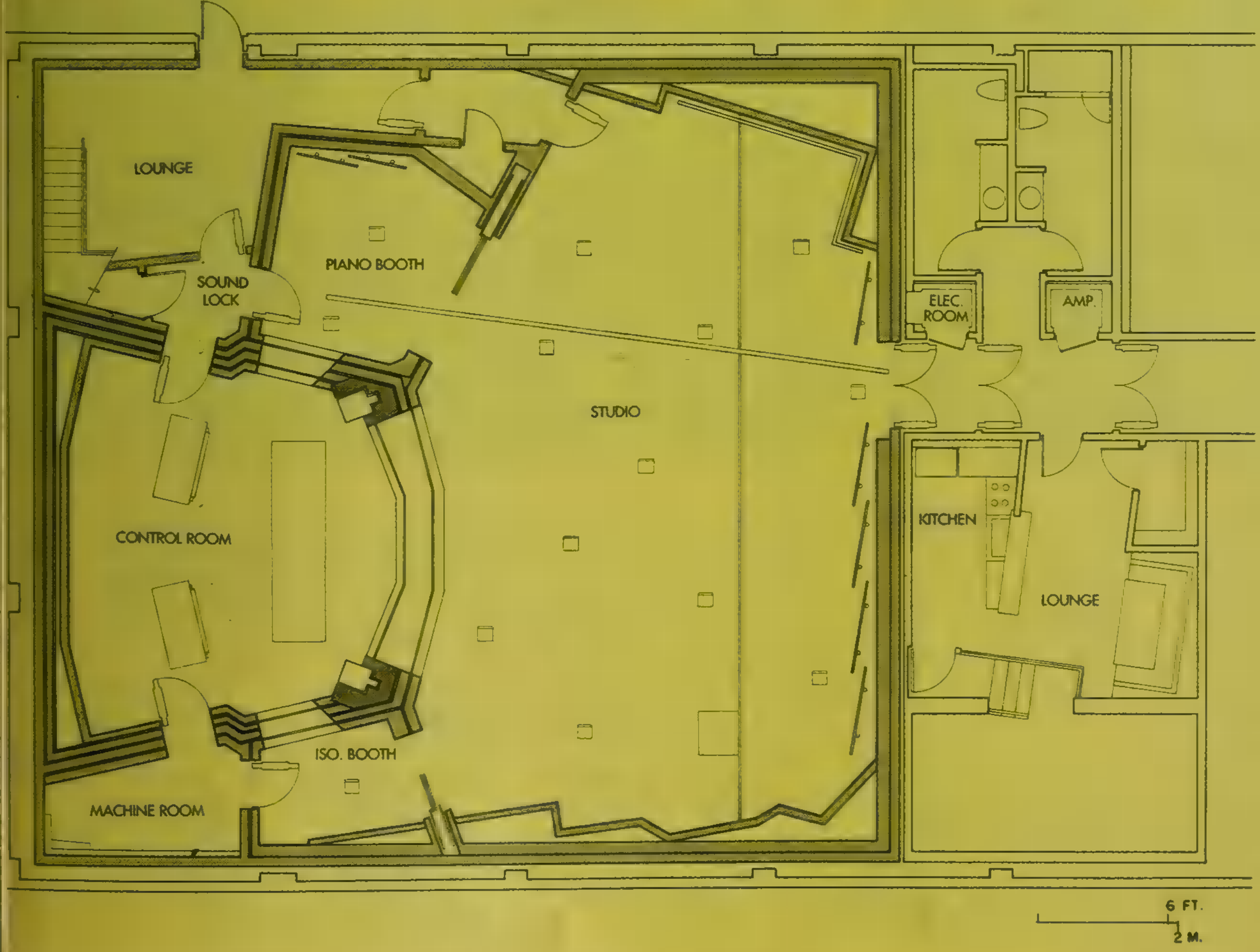
The acoustical qualities are flexible enough that the space is used for rock, jazz, and classical music recording.



Vithin the symmetrically arranged control room, carts containng equipment are close to the engineer seated at the sound board.

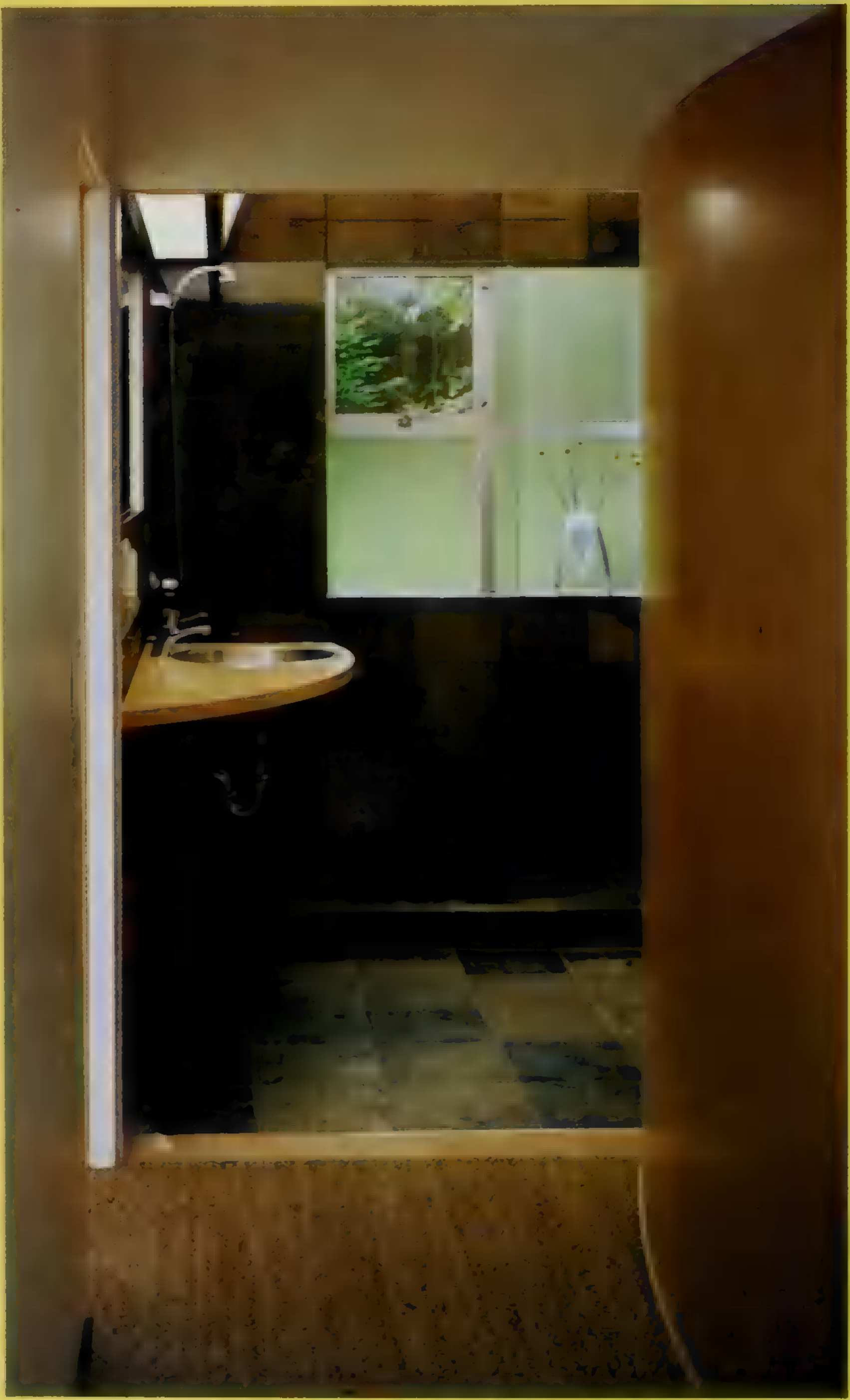


A concrete frame contains both audio and video monitors. Stud walls separate this structure from the recording studio.



In the studio, "you want a small controlled space, but you also want as much [spatial] volume as possible," explains Peter Gruneisen. A multilayer stud-wall construction isolates the recording and control areas from exterior noise (left). The number and kinds of layers vary according to location. The studio is set on an isolating slab (sections opposite).

Western Influence



Sharon Risedorph

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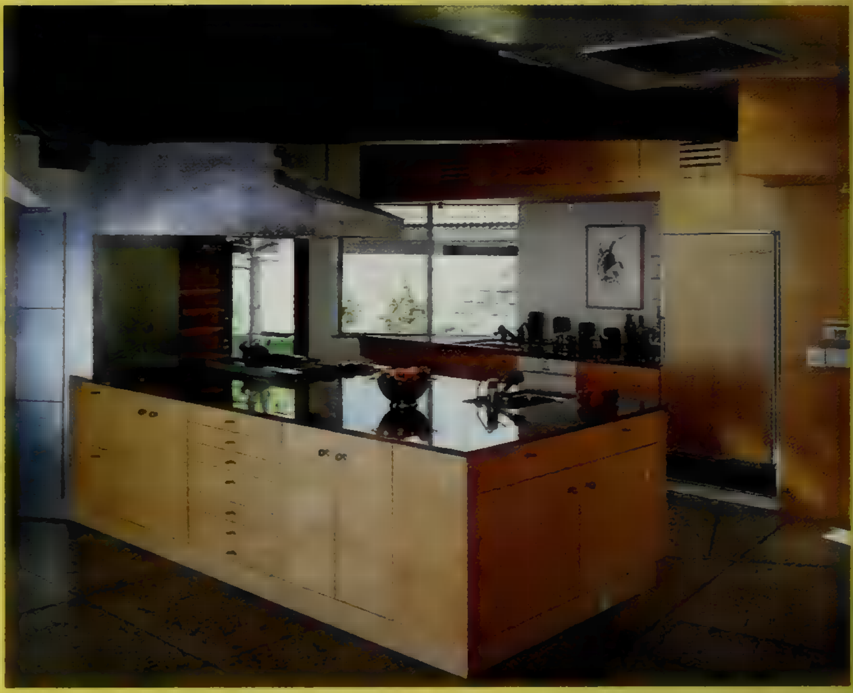

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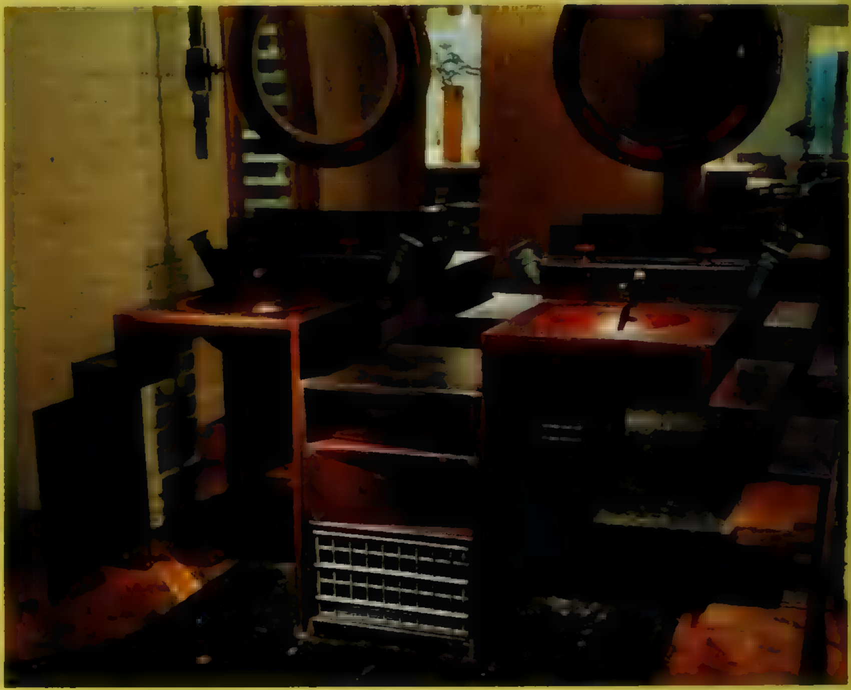

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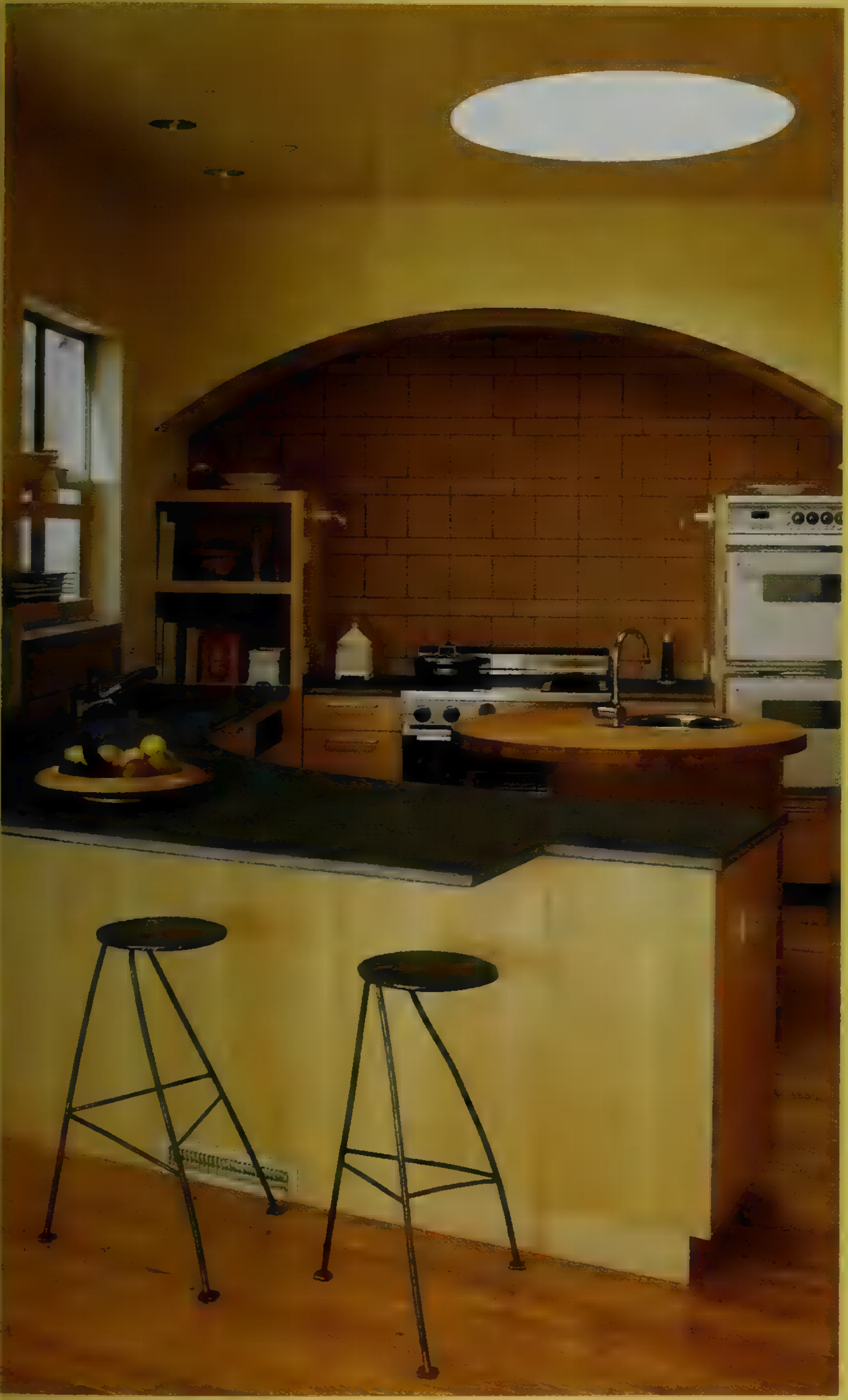
The interesting, "hot" products for tomorrow's homes can likely be found in what architects are designing today for themselves and their clients. Searching for trends while reviewing some recent kitchen and bath projects, it became apparent that natural—not painted—wood, strongly patterned stone, and various metal textures are arriving, as these recent installations—all from the West Coast—demonstrate. *J. F. B.*

1. San Franciscan Michael Harris brought the white maple he used on the walls of the living areas of a Portland house into the master bath, creating a curving, doorless entrance wall that visually separates bath from bedroom. A clear-glass light in an otherwise obscure window lifts the eye from walls and floors of multicolored Indian slate. Matting is woven of sea grass.

2. The large kitchen of a house by Eric Owen Moss uses natural materials without a strong modularity of their own that might conflict with the interior geometries of the house itself. The ground-concrete floor, patterned with brass spacers in overlapping squares, is a natural foil for the vividly veined Juperana-granite counters. Galvanized sheet metal is used on walls and custom hood; cabinet pulls are small-size shoulder eye bolts.

3. Landscape-architect-turned-furniture-artist Jack Chandler likes found metal, using jagged pieces of steel in opportunistic sculpture. This one-of-a-kind dual sink is made of patinaed steel welded to flow like a single piece of metal; spouts are copper. Sconces were found, too: at a mortuary.

Natural woods, variegated stone, and—pre-eminently—metal—contribute to an updated palette for domestic spaces.



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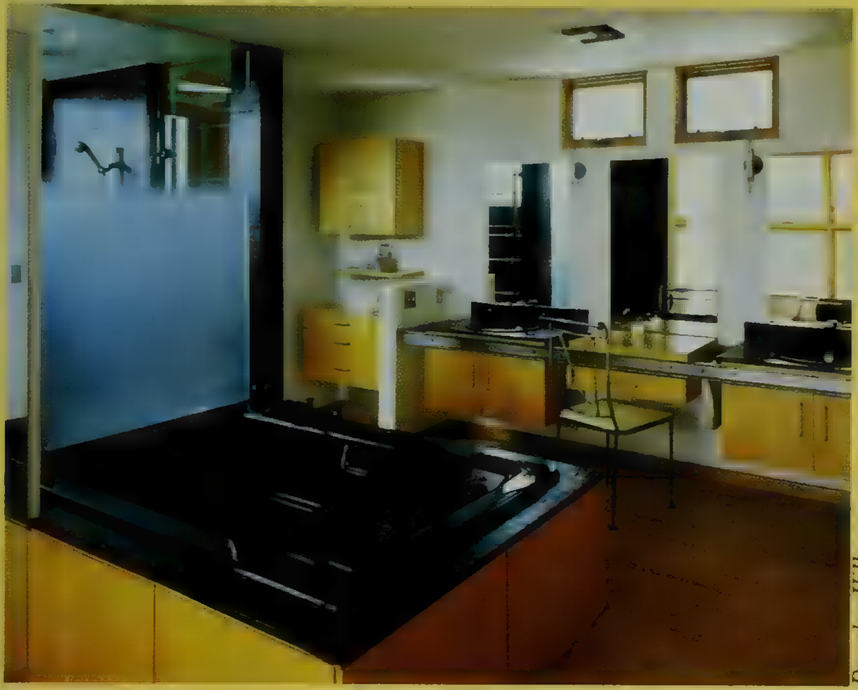

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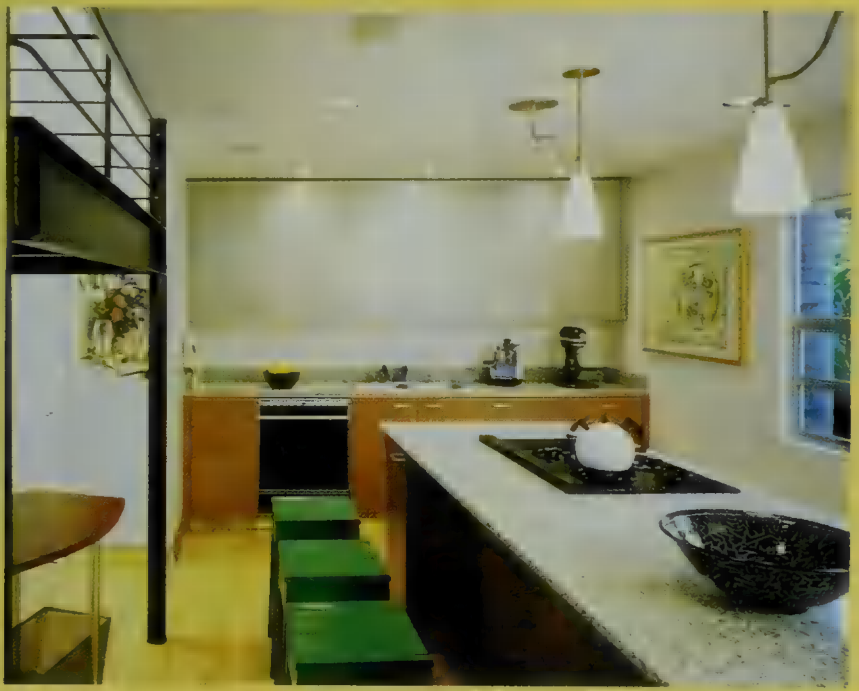
Douglas Hill



6

4. Architect/developer David Hale used an unusually strong Italian stone for a curving, enclosing countertop that cantilevers unsupported. The tiled, arched recess conceals a ventilation hood above the stove.

5. A bath by Michael Folonis is full of light from tree-top windows. Maple flooring has a gymnasium finish; the sandblasted-glass partition fades from obscure to clear, for a permanently steamed appearance. Counters and surrounds are Chinese black slate; wall-mount cabinets are clear of the floor.

6. This Kevin Walz kitchen has gray-granite counters, and MDF cabinets finished with bowling-alley wax mixed with aluminum or copper powder. Cabinet pulls are custom, as are the pendants with milk-glass shades. ■

Materials:

1. *Slate: Ann Saks. Tinted grout: Hydroment. Stone sealant: HMK. Faucets and showerhead: Grohe. Aluminum windows: Milgard. Over-mirror light: custom by architect, fabricated by Becca Foster Lighting.*

2. *Sinks, faucets: Elkay. Cooktop: Viking. Ovens: Thermador. Dishwasher: Bosch. Refrigerator: Sub-Zero. Cabinets: Clear-finished birch.*

3. *Sink-for-Two: Agnes Bourne, Inc.*

4. *Cabinets: Clear maple, satin finish. Counters: Pietra Grigia. Pulls: Häfele. Faucets: Hastings. Undercounter sink: Elkay. Island sink: Abbaka. Ovens: Kitchen-Aid. MR11 spots: Lazin Lighting. Downlights: Lightolier. Stools: Carl Dern, Agnes Bourne, Inc. Paints: Dunn-Edwards. Terra-cotta tile: Barbetti.*

5. *Tub: Kohler. Faucets: Grohe. Basins: Kroin. Pulls: Forms+Surfaces. Sconces: Artemide. Shower: Stadium. Counters: Chinese slate.*

6. *Faucets: Speakman. Sink: Franke. Cooktop: Dacor. Dishwasher: Kitchen-Aid. Refrigerator: Traulsen. Recessed lighting: Halo.*

Computers: Data Control When Many Players Are Involved

By Kristine Fallon

In Chicago, birthplace of many 19th-century construction innovations, a new method of project delivery was developed over the past five years for two major public projects to be built under design-build contracts. Both projects—the 750,000-square-foot Harold Washington Library Center, occupied in 1991, and the 2,900,000-square-foot McCormick Place expansion project, entering construction this year—have challenged the traditional view of design-build in which most decision-making authority has been highly centralized. For both of these projects, decisions were made by an ad-hoc incorporation of developer, contractor(s), and design firm(s).

The public's interest is that a design-build entity guarantees performance on schedule at a fixed price. The entity must have the savvy and management ability to do this and must assemble a team with the talent and reputation that can win the commission, including the minority and women participants required on all publicly funded projects. On the design team, there may be a dozen or more firms that are not part of the design-build entity and that work under traditional contracts with it.

Pursuing this type of project is high-stakes poker. The design-build entity must walk into the initial interview guaranteeing the price, delivery date, and performance of the concept they present. The team composition and many design decisions must be finalized in the proposal phase of the project. The team has major costs before the project is awarded. Chicago-based A. Epstein and Sons International, Inc. is the architect and engineer of record for both the Harold Washington Library Center and the McCormick Place expansion. Design architects are Hammond, Beeby and Babka, and TVS, respectively. Epstein is also a partner in the developer organizations SEBUS for the library and Mc3D for McCormick.

How computers help

These projects have motivated Epstein to [illegible], design, and implement highly specialized computer systems to streamline and control the flow of technical information. Epstein has already incorporated lessons learned on the library project into the systems design for the McCormick Place expansion, asserting that both the resulting organizational structure and the application of computer technology provide models for an integrated design and construction industry for the 21st century. The focus on these pages is on the information systems developed for the McCormick Place expansion.

CAD has been the principal drawing-production technique for both projects. The McCormick Place expansion benefits from an obvious increase in CAD competence, especially in the smaller firms involved, and the fact that lower prices have permitted all firms to own more advanced systems. Epstein chose not to compel the entire team to work on the same CAD system, because the DXF exchange format allows different systems to communicate. The majority of drawings are being produced on the Intergraph/Microstation format, but there are two other CAD systems in use on the project, and Epstein has achieved effective two-way data exchange via DXF with both. (See list of firms and their systems on opposite page.)

New McCormick Place addition (left) spans Chicago's Lake Shore Drive.

Organization of files

More important to effective data exchange than the data format is the internal organization of CAD files. Before any CAD work began, Epstein published project standards, which included directions on coordinate systems, units, use of reference files, layering, line styles, text styles and heights, and line weights. The firm also documented any data types that did not translate to other systems. Although all members of the design team committed to abide by these CAD standards, Epstein has had to assure that all groups understand and are indeed following them. If they don't, it is seldom apparent by looking at the drawings, so there must be special computer-based checks. These problems are independent of the CAD system being used. Even if all firms were using the same one, they would need to coordinate their standards and drafting techniques to achieve effective data exchange.

Communications

The team is geographically dispersed, as well as large. In this situation, computer-based communication can be particularly useful. The team employs the C4 Construction Network, which provides a nationwide communication system as well as electronic mailboxes (for storing and forwarding drawings) and plotting services. The advantage is that access to this network is by monthly subscription. There is no need for any consultant to make a major investment in communications systems.

Distribution control

One challenge in CAD is triggering and managing the distribution of files. On early CAD projects, technology enthusiasts would *wo design-build projects in Chicago illustrate ow consortiums of consultants can use different ystems and still communicate efficiently.*

equently initiate file exchanges and byass both review procedures and transmittal ocumentation. Permitting uncontrolled ata exchange is a sure way to waste time nd money—which the design-build team is ighly motivated to avoid.

he C4 Construction Network fortunately rovides an "electronic transmittal," which gs file transfers. As coordinating archiects and engineers, Epstein maintains the ntral point of distribution, receiving file ansfers and forwarding them to the innded recipients. Thus it can very precisly ack the flow of graphic information among am members.

 addition to managing wide-area electronic mmunications, Epstein's computer-techology management group has developed a mprehensive document-control and mangement system to enhance access to and haring of project documentation within a hicago-based project-team center, staffed y members of four of the design firms. The ajor parts of the system are:

ile management

Controls access to project files.
Permits only one person to check out a file r edit.
Permits any number of users to use the me file as a reference (view only).
Maintains a back-up copy of all files hecked out for edit.
Automatically checks any reference files ssociated with a drawing.
Manages any type of file, no matter which mputer program produced it.

canning system

Supplied by Speedscan.
Scans small-format documents such as emos, letters, contracts, and transmittals.
Has optional optical-character recognition.
Indexes and stores documents on Write nce Read Many (WORM) optical disks.

iew/plot system

Associates computer files with the projectocument list.
Simplifies view, print/plot, and markup acess for checkers and managers.
Tracks the dates drawings were last upated, plotted, and transmitted to others.
- Interfaces with software that displays multiple-document formats including scanned images, Intergraph native, AutoCAD native, DXF files, word-processing files, and plots.

Making information instantly accessible to authorized personnel and accurately tracking changes to documents helps the team eliminate lag time for information distribution and ensures that everyone is acting on the most current data. If the team can reliably distinguish which of the 4,000 drawings have been updated since the last round of distribution, it reduces reproduction and distribution costs. This streamlines workflow, compresses the design schedule, and improves coordination and communications.

Getting this system in place, however, was time-consuming and costly. Epstein made the mistake of not starting development until the project was firmly underway and thus found itself still getting bugs out at the design-development deadline. Malfunctions of the system at this critical juncture reduced the team's confidence in it, which in turn required an extraordinary public-relations and support effort from the computer staff.

The obvious question is whether Epstein should have purchased rather than attempted to develop the document-management capability. In the past few years, a number of document-management products have appeared on the market. Many of the simpler ones are CAD-system specific and would not have met the teams' needs. Others are very robust, but they were developed primarily for manufacturing. These systems tend to be expensive ($20,000 and up) and require considerable customization, generally by the supplier, at additional cost. They are still an awkward fit for the building-design workflow. Since this is a relatively new software market, suppliers tend to be small and unstable, frequently unable to meet their commitments for new releases and customization services.

This is an area of technology to watch. It holds immense potential for streamlining design communications, but must be evaluated with great caution and attention to detail. ■

Companies working on McCormick Place expansion and their systems

A. Epstein and Sons International, Inc.
Chicago. *Intergraph*

Barton Aschman Associates, Inc.
Evanston. *AutoCAD*

Alfred Benesch & Co.
Chicago. *Intergraph*

d'Escoto, Inc.
Chicago. *Intergraph*

Environmental Systems Design
Chicago. *Intergraph*

Globetrotters Engineering Corp.
Chicago. *AutoCAD*

SWA Group
Dallas. *AutoCAD*

Schirmer Engineering Corp.
Deerfield, Illinois. *AutoCAD*

Thompson, Ventulett, Stainback & Associates
Atlanta. *CADVANCE*

Weidlinger Associates
New York City. *AutoCAD*

Wendell Campbell & Associates
Chicago. *Intergraph*

Paul Alan Magil & Associates
Costa Mesa, California. *AutoCAD*

Ross Barney Jankowski
Chicago. *CADVANCE*

VOA Associates
Chicago. *Intergraph*

AutoCAD for Windows Release 12

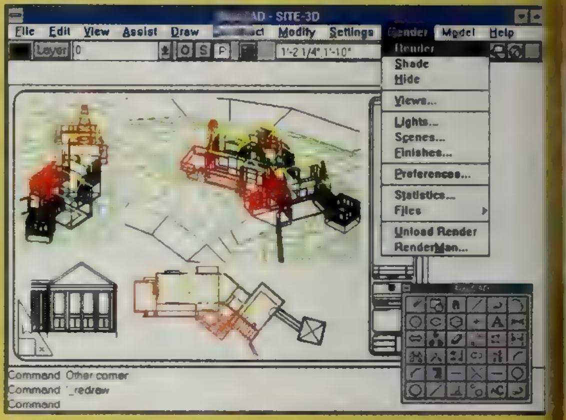
By Steven S. Ross

This first stand-alone Windows release of AutoCAD, version 12 costs the standard AutoCAD price—a full $3,750—unlike the AutoCAD Release 11 Extension for Windows, which is free to buyers of the DOS version. For the money, you get a much faster and more capable program than the Windows Release 11 version, with an almost complete set of Windows features. Those features include:

- Faster redraw and regeneration. The Windows speed is now up to the speed of the unadorned DOS version. You should note, however, that graphics accelerator cards are more widely available and generally quicker for DOS than for Windows. Thus, the DOS version runs faster in production-drafting installations. Also, the higher Windows speed is mainly due to a display-list driver built-in. This requires plenty of RAM—typically 2 MB or more for a large drawing.
- Multiple sessions. You can open up to three copies of Windows Release 12 at once in the same machine, and move back and forth among them—copying parts of files, showing rendered versions, and so forth. You need about 5 MB extra RAM for each new copy you open. What you *can't* do is open multiple windows within a single session, with separate drawing files in each one.
- Multiple render views. You *can* open multiple windows and view several rendered images at the same time on-screen.
- Good context-sensitive help through the F1 key (in case your mouse is in the middle of a command sequence).
- Object Linking and Embedding. This version acts as an OLE server (but not OLE client); it can move "objects" (drawings or data) to other OLE-compliant software in Windows; as you edit the objects in AutoCAD, they are automatically updated in the other applications. Dynamic Data Exchange (DDE) can go in either direction—Windows Release 12 can update data linked from other DDE applications, as well as send DDE. These features make it relatively easy to design add-on applications such as bill-of-materials reports. Windows Release 12 also has ODBC (Open Database Connectivity) support, for relatively easy data exchange with Informix, Microsoft Access, Oracle, and other database software.
- Intuitive Clipboard support. You can copy and paste true vector drawings as well as bitmap images back and forth between AutoCAD and other packages.
- Compatibility with Visual BASIC 2.0. Makes it easier for savvy practices and third-party vendors to write add-on applications. There's also built-in SQL, which makes writing applications easier.
- Full printer support. You can make large multiple-page images on a laser printer and stitch them together later for giant presentations (up to 130 8.5- by 11-in. pages). You can print through Windows; the software comes with extra drivers for many popular architectural printers and plotters. If yours is not among them, you will probably need an updated driver from the equipment vendor; ADI 4.1 and older drivers will not work—you need at least ADI 4.2.

How does AutoCAD Windows Release 12 compare with other versions of AutoCAD, in particular AutoCAD 12/386, the corresponding DOS version? Out of the box, performance is about the same. It is easier and less expensive to configure the DOS version for production drafting. There are more accelerator cards available, and you may already have installed one for earlier AutoCAD versions. Also, there are far more sophisticated add-on software packages for DOS than for Windows versions of AutoCAD at the present time. On the other hand, if you are relying on temporary or short-term help, or if you are using AutoCAD for conceptualizing as well as drafting, Windows is for you—it is more intuitive to use when you are not using it eight (or 12) hours a day.

How does Windows Release 12 compare with CADvance 5.0, the new full-featured Windows drafting package from IsiCAD [RECORD, February 1993, page 38]? CADvance requires fewer machine resources, is easier to set up, has better control of basic Windows features like multiple on-screen windows and files, and can (out of the box, with no add-ons) more easily handle symbol libraries. It is also far cheaper—the list price is under $2,000 and there are liberal trade-in policies. The CADvance manual is far superior (in particular its tutorial),



Command Other corner
Command '_redraw
Command

A multiple-view drawing in AutoCAD for Windows Release 12 features a deep pulldown menu to activate rendering, floating toolbox (lower right corner), and AutoCAD command line (lower left). Part of toolbar is visible beneath render menu.

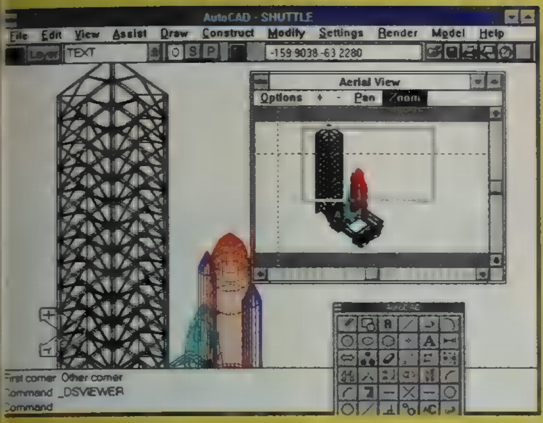
AutoCAD for Windows Release 12 Summary

Equipment required: An IBM or compatible computer capable of running Windows 3.1 in enhanced mode. Math coprocessor (80486 has coprocessor built in). DOS 3.31 or higher (DOS 5.0 or higher strongly recommended). At least 8 MB of RAM strongly recommended. Complete installation requires about 34 MB of disk space. If you use less than 8 MB of RAM, reserve plenty of disk space for the Windows swap file. Mouse or digitizer (in this version, the digitizer can control the menus without using a separate mouse).

Vendor: Autodesk, Inc., 2320 Marinship Way, Sausalito, Calif. 94965. Phone 415/332-2344, fax 415/331-8093. $3,750. Free swap for other AutoCAD Release 12 versions purchased or upgraded within 30 days of availability of Windows version; $75 swap for those who purchased other versions after roughly February 1, 1993. Call Autodesk at 800/964-6432, extension 912, for details.

Manuals: Two letter-size paperbacks, one the standard-style Autodesk installation and performance guide, the other a guide to Windows features and operations, with a short section on programming add-on features. Fine if you are familiar with Windows and with earlier versions of AutoCAD; inadequate for neophytes.

Ease-of-use: On a system with plenty of RAM (we used 16 MB), this program is a dream. As is becoming standard for Windows-based CAD products, AutoCAD 12 compensates for the awkward Windows pulldown menu system (few menus but long lists of commands in each) with a toolbar



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irst corner Other corner
ommand _DSVIEWER
ommand
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erial view keeps track of zoomed-in view ith reference to entire drawing for you.

ut publishers are already rushing out utoCAD books to reduce that gap.

utoCAD offers a wider range of drawing ools, easier 3-D (though still not easy), and etter compatibility with its own DWG files. CADvance can import and export DWG now, ut must change the internal entity structure lightly because the two programs do not decribe objects in exactly the same way).

ADvance seems faster in same-task comarisons, but you must do some things (like rawing complex curves) in different ways in ach of the two programs; AutoCAD has more specific tools for doing things in fewer teps. We showed both programs to architecure students who have done production rafting. Their opinions varied as to which is aster and more comfortable—it depends on ow they think about putting 3-D objects on a -D screen, and how adept they were at creatng macro instructions to do repetitive tasks. *ircle number* **300**

nd floating toolbox that can be customized y users. Installation does not modify your ONFIG.SYS file to make sure the number f files you can open is at least 40, but most Windows users already have their FILES tatement set that high. You can import and xport conventional binary DWG files beween Windows, DOS, UNIX, and Macintosh latforms without thinking hard. There's lso DXF, of course, and DXB (binary or SCII-based plot files), along with IGES. **rror-trapping:** About as good as it gets in Windows—which means not perfect. In paricular, multiple sessions with different onfiguration requirements must reference ifferent ACAD.INI and ACAD.CFG files in ifferent places on disk. If you try to open everal files at once, the software's internal rror handlers note the error and get on with their business. ■

Tempra Pro 3.0

This package, meant more for graphics artists than for architects, can take a CAD file and turn it into a colorful presentation. It does not offer as many drawing tools as does Corel Draw [RECORD, November 1992, page 32] but in full form, with all animation, sound, and authoring options, it handles presentations more easily.

You can also modify the system to suit your tastes—right down to changing the cut of the "brush" used to paint images on the screen.

Tempra can handle large, colorful images quite fast, mainly because it is a true 32-bit application. It will run under Windows or OS/2, but only in a DOS box. A version that works with Windows NT (the 32-bit operating system due to be released by Microsoft this summer) is expected to be available later this year.

Tempra Pro 3.0 Summary

Equipment required: IBM or compatible, 640K of RAM (4MB strongly recommended), VGA monitor, 80286 or later CPU (80386 or later strongly recommended), mouse, or digitizer.
Vendor: Mathematica, Inc., 402 S. Kentucky Ave., Lakeland, Fla. 33801, 813/682-1128, fax 813/686-5969. Tempra Pro (includes Tempra Show for multimedia presentations), $695. Tempra Author (adds Turbo Animator and other device-specific control features), $995.
Manuals: Clearly written paperbacks discuss each command and function in detail, with good examples.
Ease of use: Good. It is possible to create truly huge images, however—40 MB or more. Leave plenty of disk space. The interface is "graphical" but unique, with reasonably intuitive dialog boxes and pulldown menus. We had trouble installing some of the software automatically on an 80486 computer with AMI BIOS; the INSTALL program thought we were running DOS 3.3 instead of 5.0. The problem is in the install "engine," and has happened with other packages.
Error-trapping: Good. The system warns you of any action that will destroy work. The system is also extremely stable, even though it is a tight fit in any computer. ■

The authoring tools are of particular note, because most architectural presentations are flexible on time but must be exacting in content. This works well with Tempra's "event-based" authoring controls. Event-based authoring also seems more natural to the newcomer.

The biggest weakness for architects is an inability to import DXF or other common CAD files directly. If you are using a Windows-based CAD package, however, you can save what's on your screen to the Clipboard and then to a BMP file. Tempra will also import GIF, TGA, WIN, TIF, PCX, EPS, PCC, PTN, and Autographix files. You can keep up to 16.7 million colors in a file if you go to 24-bit, but 8-bit (256 colors) is almost always good enough for presentations, and uses only a third the disk space.
Circle number **301**

This is a 24-bit color image produced with Tempra Pro. Note the shadow gradations under the shelf and the fine detail. You can edit an image 8196 by 8196 pixels, if you have enough disk space.

A Conversation with Ada Louise Huxtable

By Robert Campbell

During 18 years as architecture critic of The New York Times, *Ada Louise Huxtable established herself as the most trusted voice in the field. She left the* Times *in 1980 to embark on a new career as author and consultant. Living both halves of the American dream, she now divides her time between a beloved ranch-house-with-swimming-pool in Marblehead, Mass., and a penthouse apartment on Park Avenue in New York City.*

It was in New York that she recently reflected on her years in architecture, in a talk with Robert Campbell. In this first of two installments, she looks at the current scene and comments on the purpose of architecture criticism. In the second installment next month, she talks about her own values and background, then speculates on our desire today for an environment of "themed entertainment."

The current scene

Robert Campbell: In the years you've been looking at it, how would you say the world of architecture has changed?

Ada Louise Huxtable: I think it's changed in a very basic and fascinating way. It's changed from a world of optimism to a world of profound pessimism. In the time since I started my career, which was really right after the Second World War, I've seen this change from believing that we can solve the world's problems, that we can make the world a better place, that architecture and design had a very powerful and positive role in helping people to live better. In the intervening years we lost that belief. In fact we've lost an entire belief system. This wasn't just something that depended on design or architecture or postwar optimism. It was part of the Modernism, part of the spirit of the 20th century. We truly believed that the horizons of technology, the horizons of art were going to lead us to a better place and make us better people. We became very disillusioned. We found this wasn't true. We became overwhelmed by problems that no technology can solve.

RC: Or in some cases, problems that technology had created. That the automobile had created, for example.

ALH: Had created, absolutely, yes.

RC: But that kind of thing happens throughout history, doesn't it? There are periods when we think of the Golden Age as being in the past, and we're devolving from it. And there are periods when the Golden Age is in the future and we're evolving toward it, a kind of Marxist progress. Have we undergone one of those shifts?

ALH: I think we've undergone quite a unique shift. I don't think any other century in history has included the profound changes this one has. I think art has been liberated. I think this is all good. I think there's been a tremendous opening up. The implications for art and architecture are enormous.

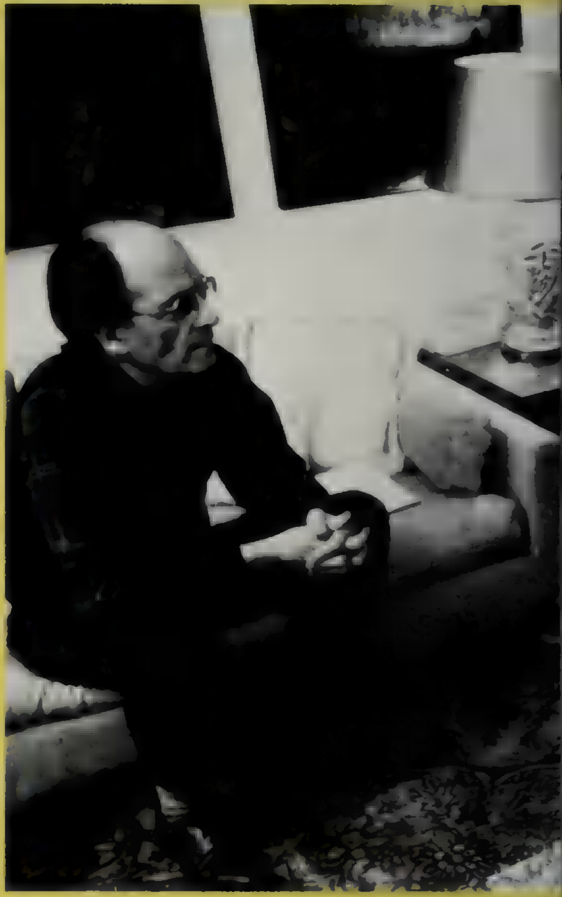
RC: Maybe you could cite some examples.

ALH: Well, there was a nice comfortable simplistic belief that form *did* follow function. It still has to be basically true, if you're not to do something outrageous. But it is not the way you define good building or good architecture any more. Function is something that happens in many different ways and can be interpreted in many forms. But because there was such a simplistic way of looking at it, a whole system of rules evolved which we called Modernism. And the fact that these no longer hold means that serious architects are looking not only at function and form. They're taking architecture apart and putting it together again in terms of how we now think about the world, how we see the problems, and see the relationships to people and to sites. I think we have a group of brilliant architects who are creating an art that is quite unprecedented, and yet is grounded in everything that has ever been sound about architecture and history. You want names?

RC: I want names, dates, telephone numbers.

ALH: OK, one we just lost. James Stirling. To me, he was Number One. That doesn't mean I don't have a lot of others right up there. But I feel that more than many, Stirling had the ability to conceptualize in a true architectonic way. A multispatial way. His concepts were more than three-dimensional. They were the total space, the total enclosure. When you read his plans and his sections you read them all at once. You never walk from one part to another. This is what great architecture does. It creates these multidimensional, total relationships. I think Stirling had it.

Robert Campbell and Ada Louise Huxtable in her New York City apartment, surrounded by "the accumulation of a lifetime," including furniture designed by her late husband Garth, Artek chairs, and Tiffany glass.



RC: What's your favorite Stirling building?

ALH: There's no building you can say is perfect. There's no one you can say you love all of. But I remember his submittal for the National Gallery extension in London, and just being bowled over by the drawings because of what they were conceptually, what they were in terms of seeing the whole program, the whole site, the whole use of space.

RC: He did play the whole game, didn't he?

ALH: He played the whole game.

RC: He had an attitude toward history, toward site and context, an attitude toward program, toward art movements, everything.

ALH: Everything present and everything handled with tremendous mastery. I think Stuttgart [the Neue Staatsgalerie], the urbanistic achievement there is unparalleled, amazing. The galleries disappoint me a little bit—I'm probably the only one—because they are too conventional. They are in line, enfilade, as the gallery wanted. They're superb for what they are, but they contain no surprises. Whereas at the National Gallery in Britain, I think Venturi, Scott Brown achieved the surprises. They achieved the vision from one gallery into another, a way of

© *Luca Vignelli photos*

seeing paintings together, a way of anticipating spaces that the classical enfilade does not do.

RC: What about the future? Do you see something emerging?

ALH: Yes, I think we are now in one of the most significant creative periods—I don't want to say "in history"—I'll certainly say in this century and the beginning of the next. I'm one of the holdouts who think Modernism was one of the great creative periods and great sea changes like the Renaissance. I *sincerely* believe that. I sincerely believe it was one of the great movements of history. We now see the closing of that chapter and the opening of a new chapter in which nothing important has been forgotten, in which everything is based inevitably on the lessons and changes of Modernism, whether structural or philosophical or esthetic. None of it gets thrown away. It becomes the base of the change that comes next. So that one mistake in thinking about Modernism is thinking that it's over; it's not. It is a foundation, as everything in history has incorporated the knowledge that went before it. That's what's happening in architecture today. In our field, I think it's a perfectly marvelous time to be working.

RC: What about the movements of the moment? Deconstruction, for instance, and a term you hear around some of the schools, Realism, or the New Realism, a kind of return to a Modernism based on program rather than style?

ALH: I think this is all part of this very essential and quite wonderful process that's taking place, of taking it all apart, re-examining it, but re-examining it not in terms of some optimistic, looking-to-the-future set of invented principles, but in terms of what has been done, what can be done, how various things we are familiar with can apply to completely restructuring what is being done.

> *"I'm one of the holdouts who think Modernism was one of the great creative periods and great sea changes like the Renaissance. I... believe it was one of the great movements of history."*

RC: You speak of "pulling things apart." But of course that's what some of them do literally. Frank Gehry, for instance, takes a building program and literally pulls it into pieces which he then reassembles in a compositional way. Is that a metaphor? That the architect, in physically taking apart the program, is really taking apart an esthetic system that had grown up.

ALH: That's *exactly* what I mean. He's taking the package apart, taking the building apart, taking the philosophy apart, everything is being taken apart. Every architect does it in a different way. Whatever mannerisms he loves to apply or to integrate, he's absolutely studying program, studying site, studying the function in terms of how function moves from one part to another. He also is taking apart and conceiving in terms of bits and pieces and units. Each architect has a different way of unifying the result. I think this is basic to every one of these movements.

RC: Other things in our culture are getting pulled apart too. What people now call the "Eurocentric" tradition is being tugged at from all directions by a desire for greater pluralism.

ALH: You're absolutely right and I think art is always part of the culture whether it expresses it in a more formal abstract or esthetic way, or whether it concerns the fragmentation you just described. I think that's art's validity—good, bad, or indifferent. Its validity is that it's all part of a general consciousness.

The critic

RC: I'd like to raise another issue. It's about critics. What's an architecture critic for? You're not a consumer guide. Nobody consumes new buildings the way they do movies or restaurants or art exhibits. So what's the rationale?

ALH: I think just the opposite. I think this is the ultimate consumerism. I think we are so subject to architecture. I think it has such an influence on us, both conscious and unconscious. I think it colors our days and our lives. It affects our attitudes toward our work and our environment. It can give us a sense of dignity and well being. It can destroy us. I think it's the most influential of all arts. Certainly the most complex of the arts. I think this is an enormous responsibility of the critic.

RC: What is the critic trying to do?

ALH: Trying to see that things are done in such a way as to have the maximum effect in terms of life and art and what we experience in our daily lives. Take an example. I just read about a school in the Bronx—kindergarten through sixth grade—with no windows. And dedicated teachers and students who are devoted to trying. And it is just so grim, so dismal, that someone has even drawn a window on one of the blank walls. It's a school! We build them supposedly to educate and mold our young people.

RC: And the first lesson is: Don't interact. Defend yourself.

ALH: Defend against the world. It's a sad lesson. It has so much to do with your sense of self worth.

RC: So you see the critic's role as that of raising the level of understanding and demand for architecture, by defining what's good and bad?

ALH: Raising consciousness. Creating awareness. I think this is a supine world. It's a supine consuming public for architecture. People have entitlements for everything else. They know every entitlement, no matter how outrageous. But they do not know their entitlements to architecture and the environment. They have them and they should expect them.

"People have entitlements for everything else. . . no matter how outrageous. But they do not know their entitlements to architecture and the environment."

RC: What are people entitled to?

ALH: They're entitled to places that go beyond decency—and many of them are below even that level. Places where you can be enriched and grow and feel your own sense of self-worth developing. Architecture can help all that. But of course, we mustn't make the mistake of thinking architecture can do what it can't do, which was the problem with the Modern movement. These cases of blowing up housing as if the architects and the buildings were at fault.

RC: You're thinking of Pruit Igoe?

ALH: That kind of thing, yes. Surely too much hope was put upon giving people enough space and light and air and basic facilities. But there was no reason to destroy housing as being the creator of the problems—the multiproblem family, with which these housing units were stuffed. No construction could have survived it.

RC: What qualifies critics to decide what's good and bad? (You can tell I feel I've come to Delphi here: these are the answers I've been waiting for all my life.) Where do the judgments come from? Have you ever seriously regretted one?

ALH: Umm-hmm.

RC: What is it?

ALH: Only one. The only thing I think I really screwed up on was Yamasaki. It was shortly after I came to the *Times*. He was doing a new kind of work that I thought—quite early on, you see, this was the '60s—was going to lead us out of the traps of Modernism. Actually, it turned out to be a bunch of clichés. When he did the World Trade Center, which I remember calling the biggest *daintiest* buildings in the world, there was no substance.

RC: Everybody went overboard on Yamasaki. I remember seeing him in *Time* magazine.

ALH: He was a cover.

RC: Anatole France [the French novelist and satirist, who lived from 1844 to 1924], I think it was, said that a critic is someone who reports on his adventures among masterpieces. How often does it happen that you hit a *real* masterpiece? For me that's the biggest thrill of all.

ALH: It *is* the biggest thrill of all, and it's sometimes quite unexpected. I remember walking down a London street in Spitalfields, and at the end of that street encountering a Hawksmoor church in the rain. There was this slick, shiny-dark pavement and this *strong*, complicated, marvelous church rising almost out of the mist with a reflection in the pavement, and it was, "Oh, wow." It just hit you so hard, the complexity and the mastery, and how complexity and mastery again became simplicity. That whole thing just worked so wonderfully. And you're blown over. And it happens enough to make it a wonderful job.

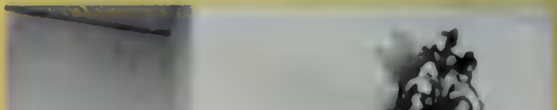
RC: I had an experience like that at the Alhambra, also alone, also in the rain. What are some others?

ALH: Almost any Aalto building has that effect on me. They are buildings that reward you so much more than you expect. You don't expect that total mastery. They photograph badly, they're very subtle, so you expect something that is "good," but you don't expect to walk into, as I did, and this is another moment—the symphony hall in Helsinki, not Finlandia Hall, I'm not sure of the name [House of Culture], and there was an orchestra practicing so we were given special dispensation to just come up a side stair and look at the whole thing. You walked up that stair, you heard that music, you saw this circular interior, and you realized that *everything* worked at once; that this space had been conceived probably just like that, as a complete round space, that everything fed into it, not by careful manipulation or trial and error, but because here was a master. And the music was right and the space was right and the shape had utter simplicity, again, the simplicity of mastery. And it was a kind of epiphany.

RC: Do you have those experiences as often as you used to?

ALH: Anytime you get me to a building like that I'll have it. ■

Part II of this interview will run in Observations in May.



Ada Louise Huxtable at home.

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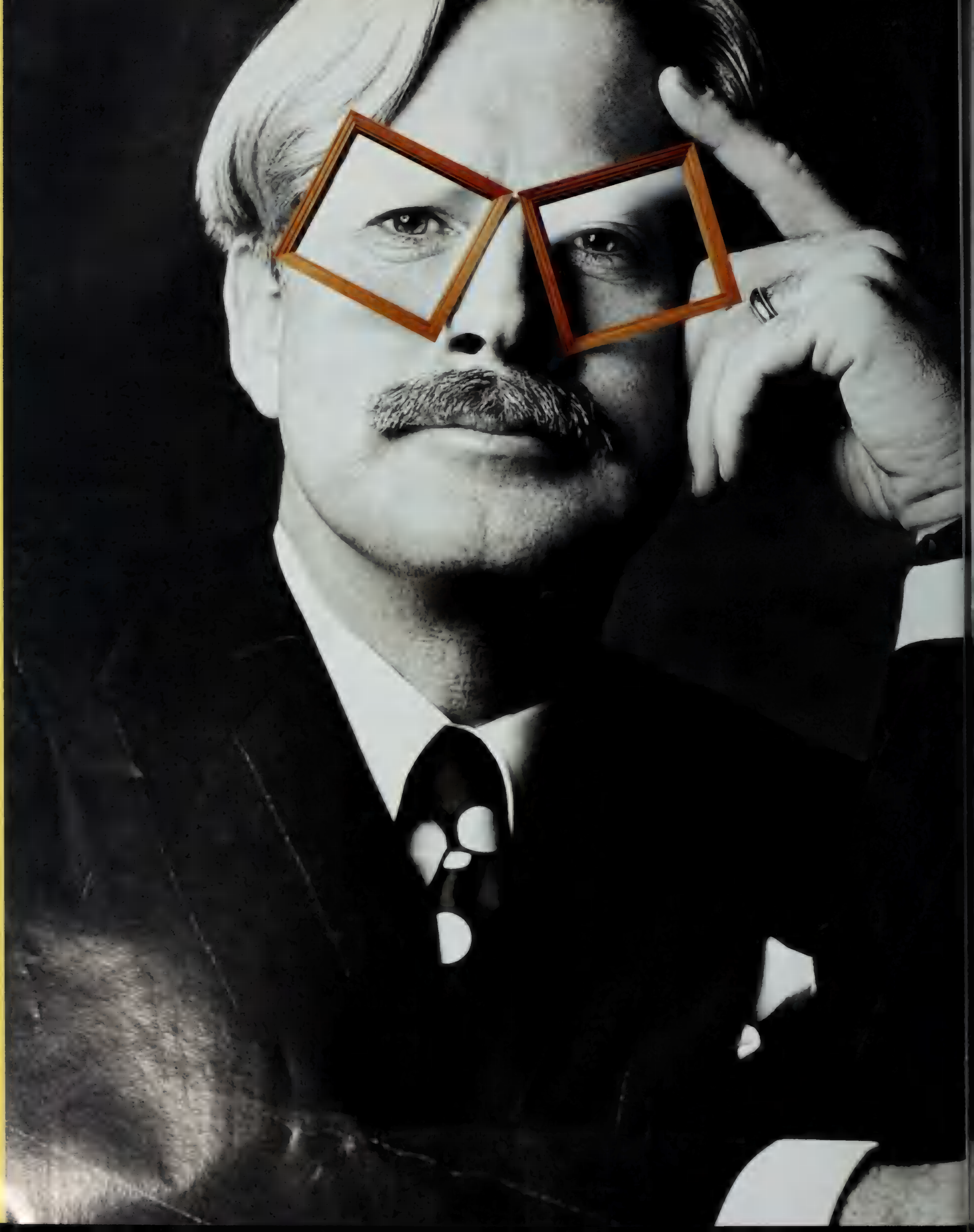

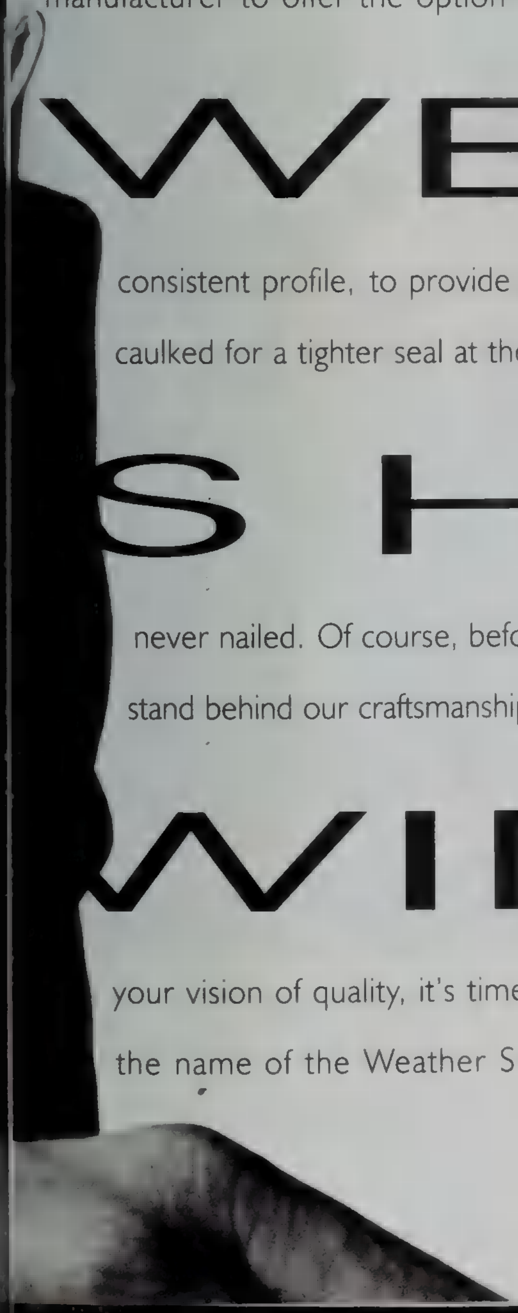

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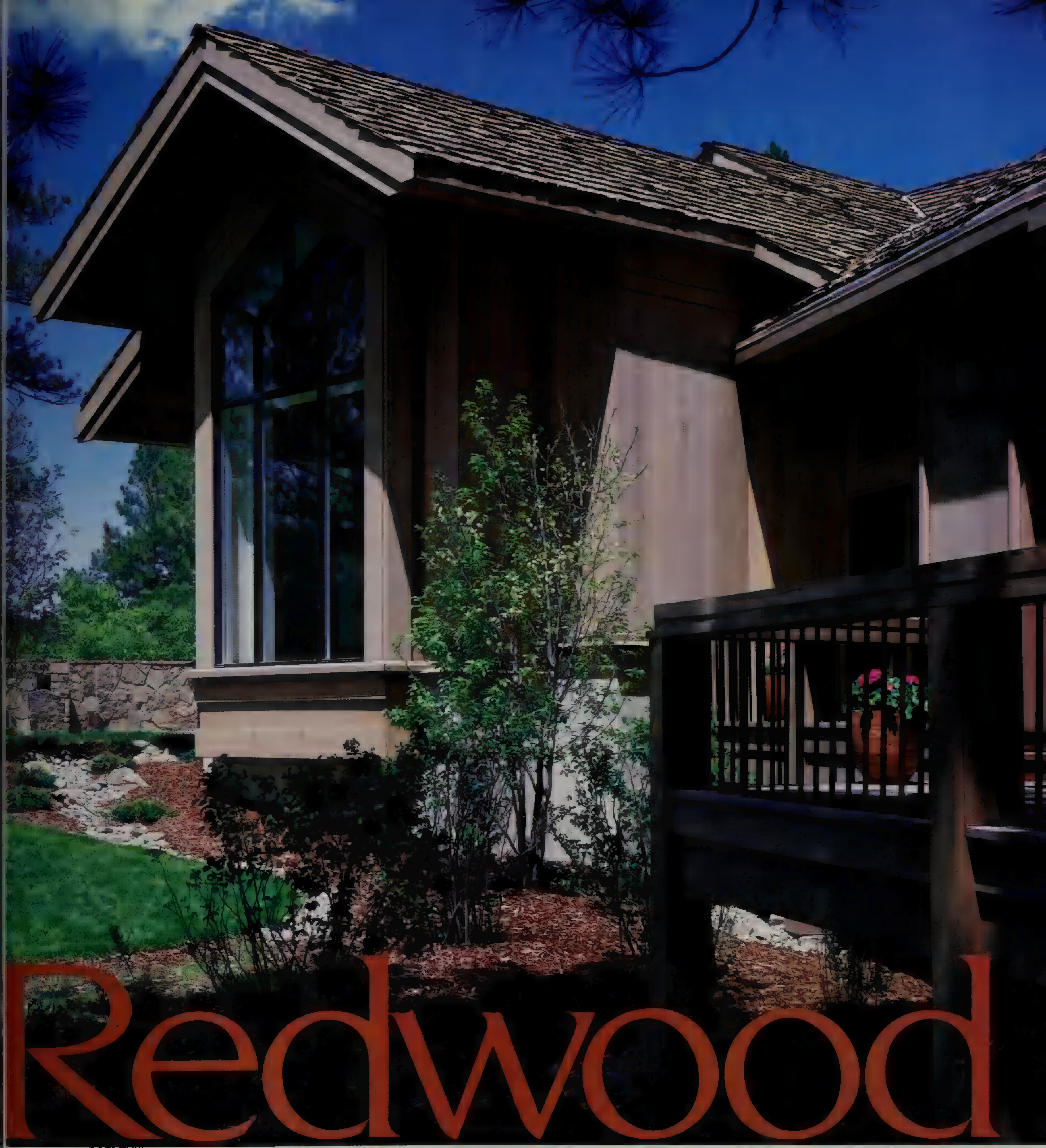

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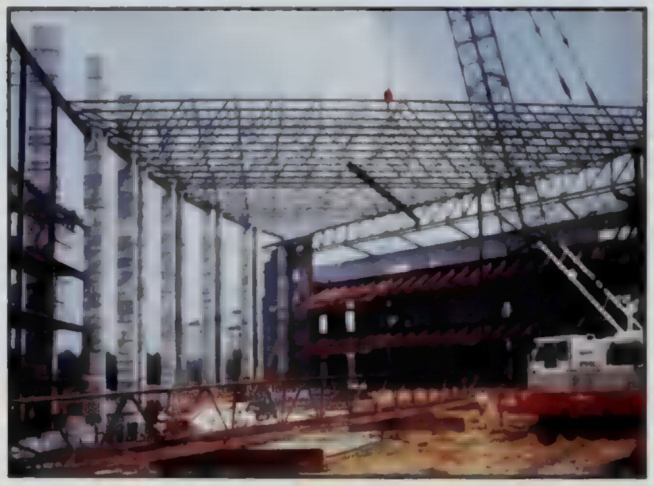
The Steel Joist Institute (SJI) has created a computer program to assist the qualified professional engineer in determining probable vibration characteristics of floor systems using open web steel joists. This program is designed for use in conjunction with the institute's Technical Digest #5 "Vibration of Steel Joist-Concrete Slab Floors."

This program allows the designer to calculate swiftly and easily the frequency and amplitude resulting from transient vibration caused by human activity on a joist-concrete floor. The "what if?" scenario—variations in slab thickness, concrete strength, joist size, joist spacing, floor decking, live and dead loads, span lengths—can be accomplished in seconds.

The program is user friendly, can handle spans up to 100 ft. and can accomplish in seconds calculations that previously required several hours. It is available on 5¼ and 3½-in. disks and is IBM PC compatible. A comprehensive user's manual is included.



Long-span joists provide broad, column-free expanses like the sanctuary of this Charlotte, N.C., church.

The SJI 60-Year Steel Joist Manual is also now available. The new, 318-page 60-Year Manual replaces the 50-Year Digest and features 98 more pages of information. The practical section in the Manual is designed to aid the professional by listing four helpful categories:

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Another helpful reference that's now available is the SJI 1992 Catalogue of Specifications and Load Tables. All of the 1992 revisions are prominently listed so that specifiers can review these changes quickly and easily.

The section of fire-resistive assemblies has been expanded and completely revised. It lists the requisite criteria for using K-series joists in an assembly and includes a simple, five-step procedure for selecting the proper and most economical joist. In addition, the catalogue contains over 75 floor and roof assemblies listed in an easy to use chart for quick reference, with specific UL designations for fire ratings from one to four hours.

Last year, Underwriters Laboratories, Inc. increased the allowable design stress of fire-rated steel joists by 36% for floors and 18% for roofs. The allowable tensile stress of joists used in most fire-rated assemblies has been increased to 30,000 psi for floors and 26,000 psi for roofs, as compared with the previous maximum stress level of 22,000 psi. The new standards now make it more economical to achieve desired fire resistance ratings without added expense for heavier joists.

For information contact the Steel Joist Institute, 1205 46th Ave. North, Myrtle Beach, SC 29577.

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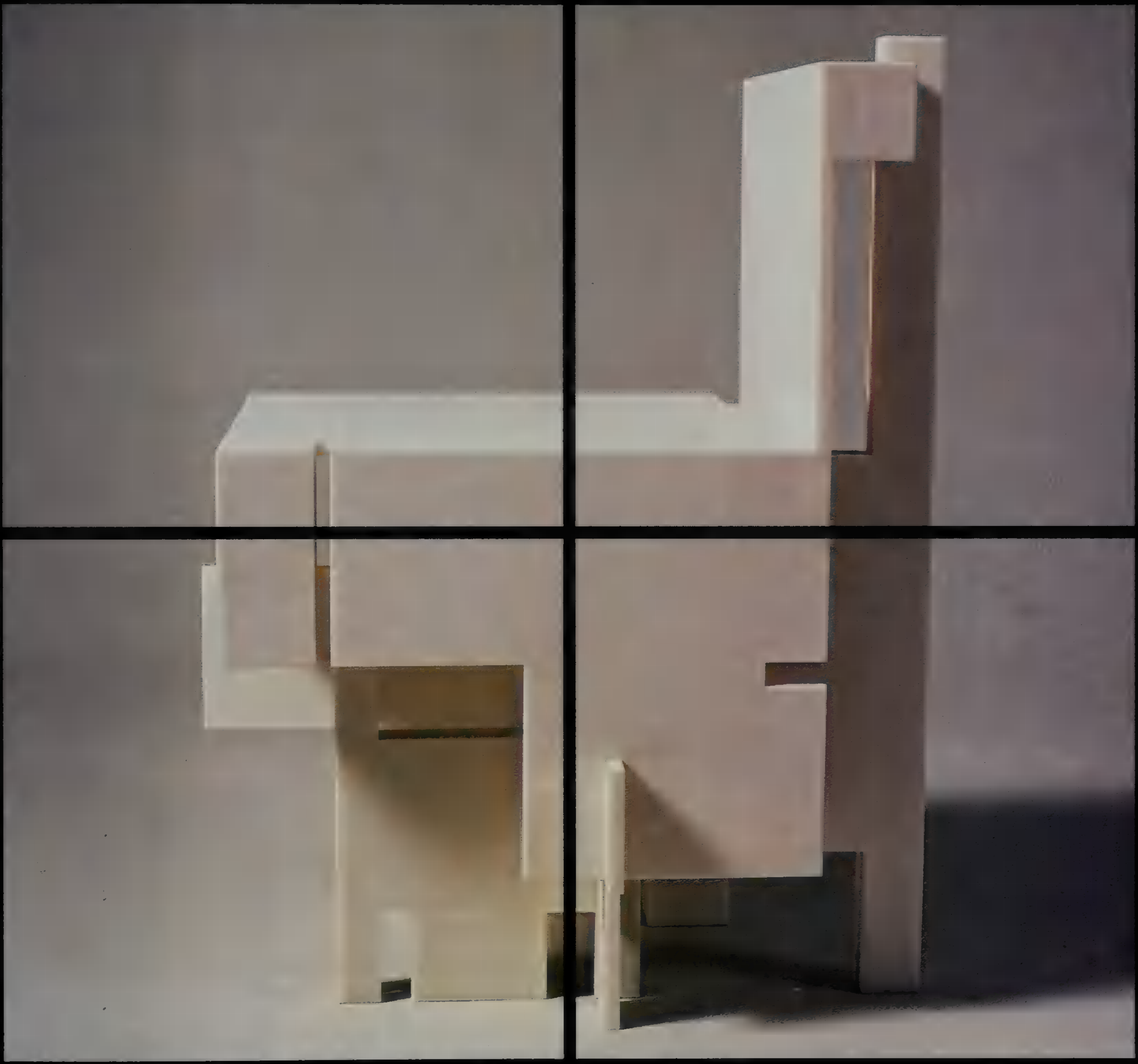

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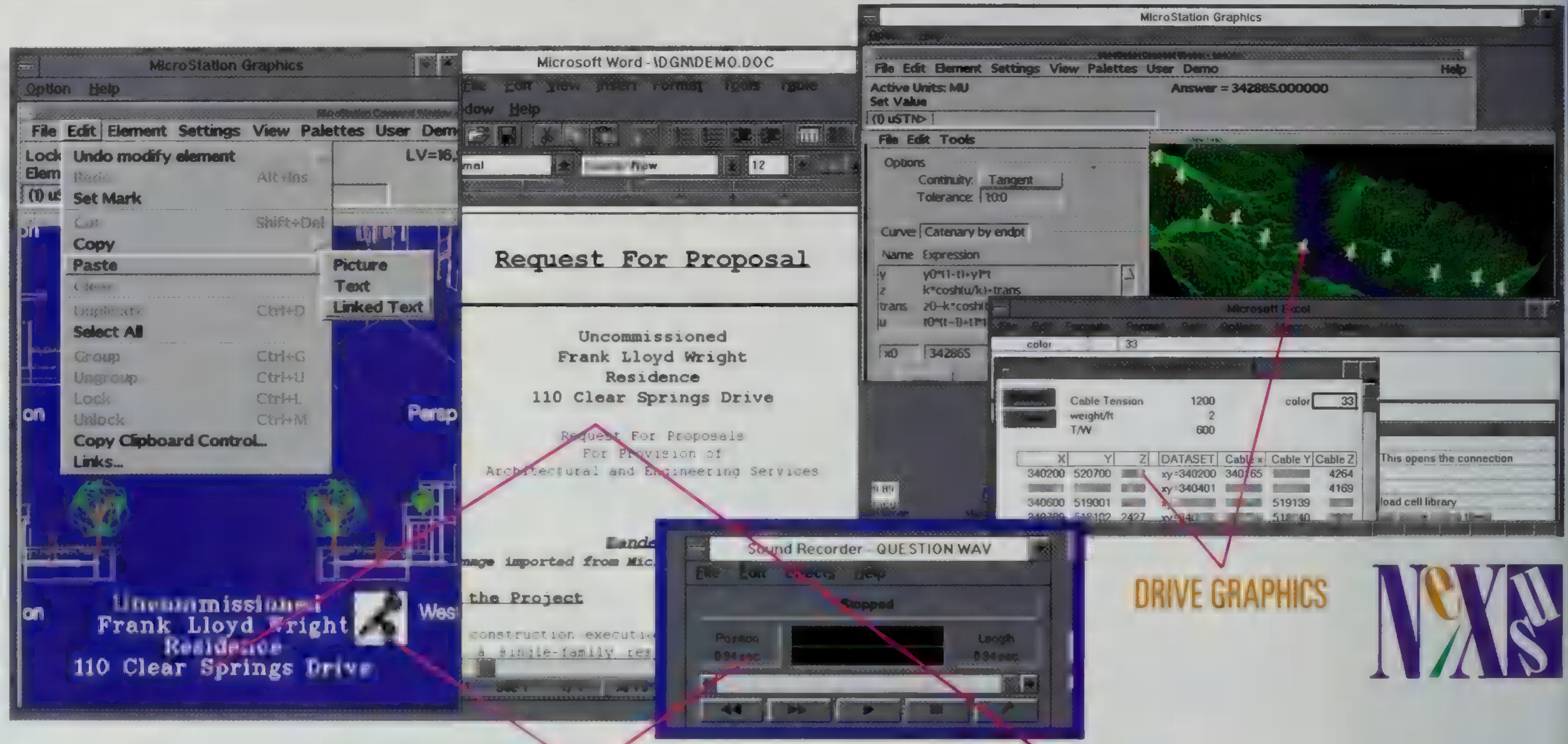

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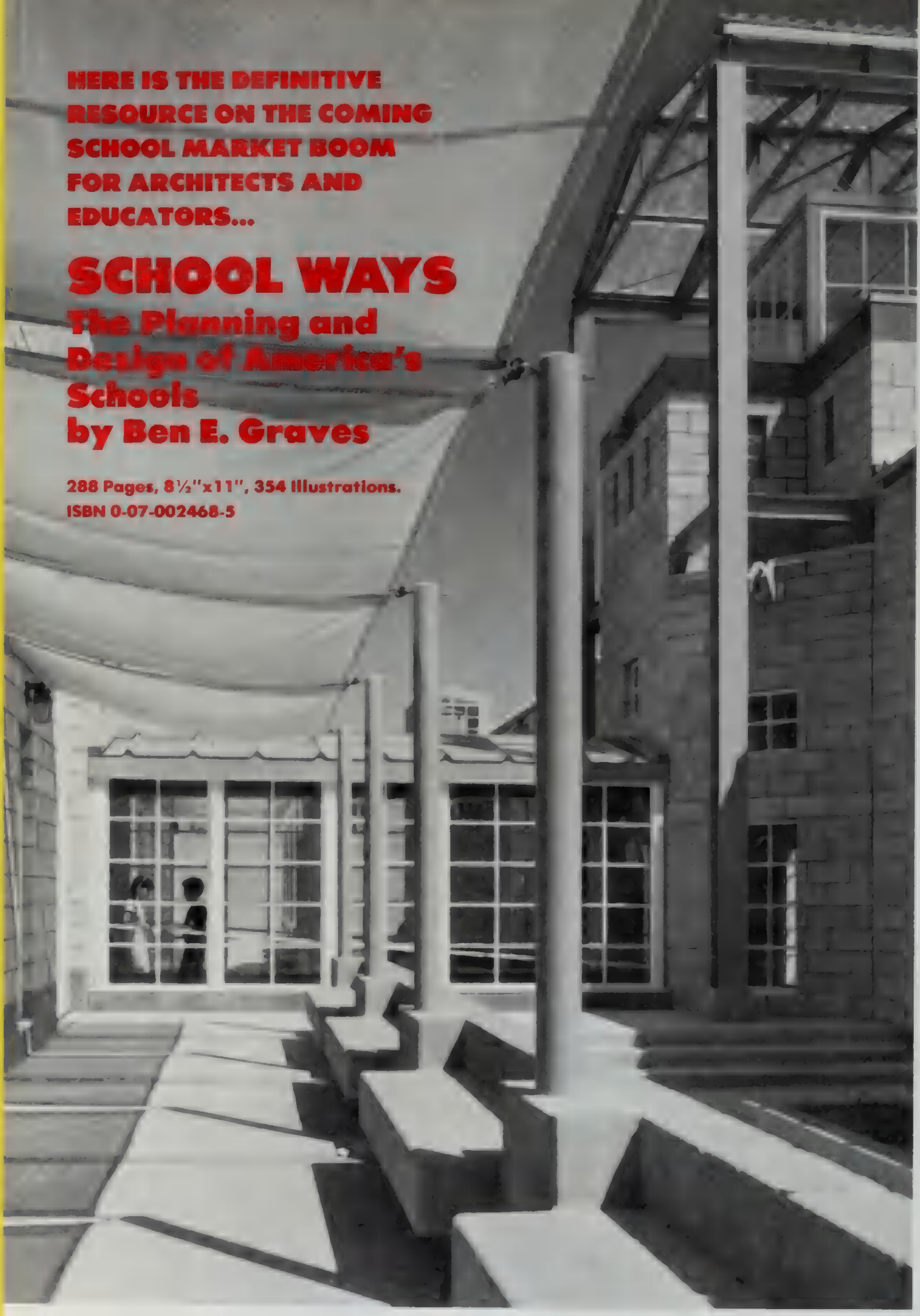

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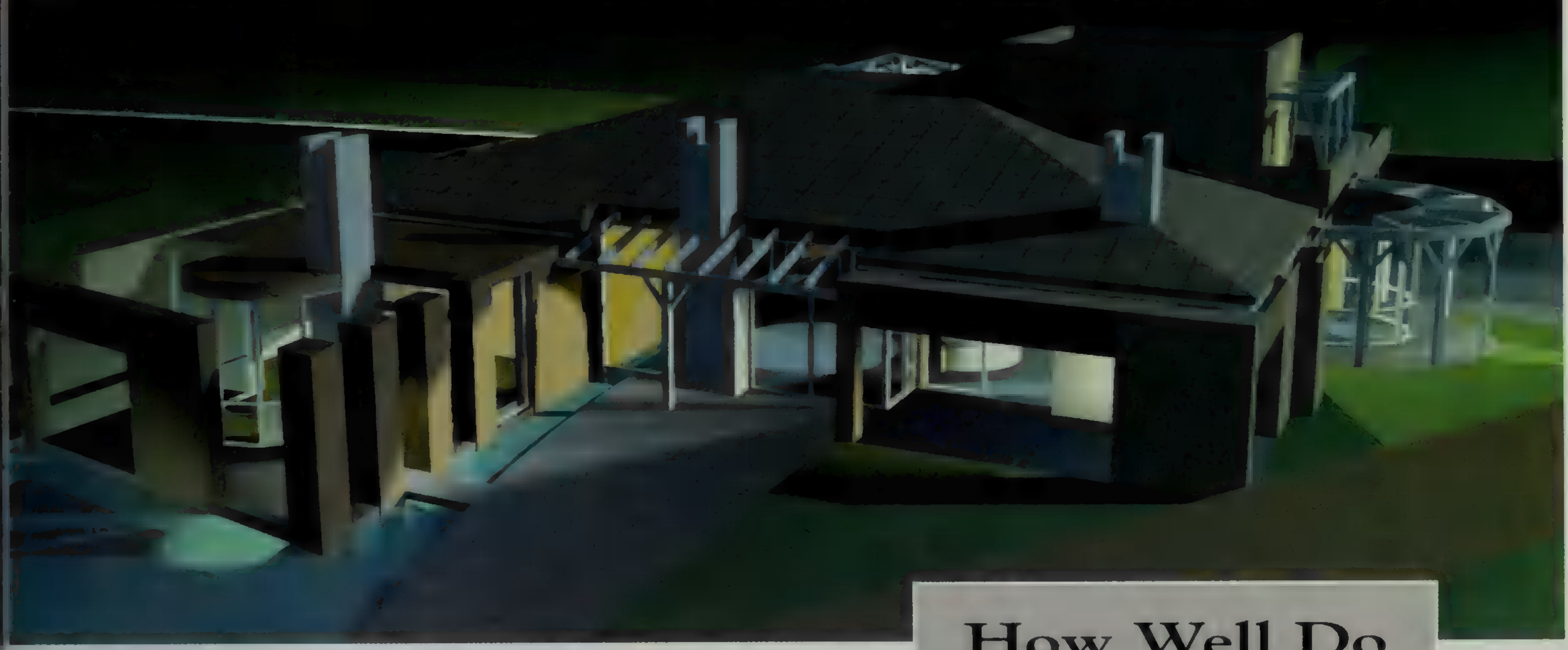

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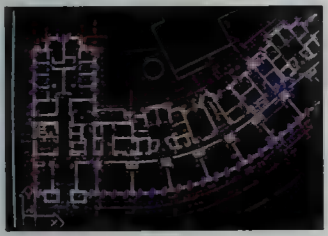

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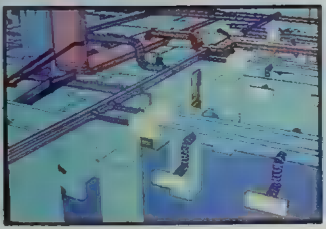

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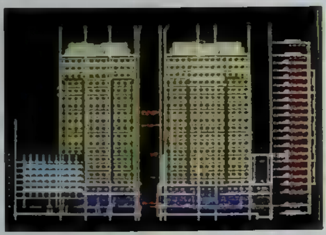

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Building Types Study 704/Record Houses 1993

As Frank Lloyd Wright said in one of his 1930 Kahn Lectures at Princeton University: "Human houses should not be like boxes, blazing in the sun, nor should we outrage the machine by trying to make dwelling-places too complementary to machinery. Any building for humane purposes should be an elemental, sympathetic feature of the ground, complementary to its nature-environment, belonging by kinship to the terrain. A house is not going anywhere, if we can help it." Some of the houses featured in the 38th annual RECORD HOUSES issue are closer than others to Wright's ideal and thereby reflect a refreshing lack of reigning style. Each house is a portrait of the owner and the architect. Collectively, the houses tell the story of architecture in the 1990s, shaped as it is by evolving ideas of family, limited financial resources, and newly pressing environmental concerns. For Stanley Tigerman (page 72), Frank Israel (page 100), and San Francisco firm Tanner Leddy Maytum Stacy (page 84), who have produced larger-scale works in the past, a residential commission is an opportunity to reassess the state of their own art. For principals of younger firms like partners Deborah Berke and Carey McWhorter (page 90) and Gisue and Mojgan Hariri (page 76), a full-fledged house can be a breakthrough. For firms like Bentley LaRosa Salasky (page 94) and William Bruder (page 64), who built their reputations on residential design, each new project is a chance to enrich their study of this most elemental building type. *K. D. S.*

Manufacturers' Sources listed on page 119

Desert Shield

For a retired couple and their animals, Will Bruder designed a house that captures desert views in every room.

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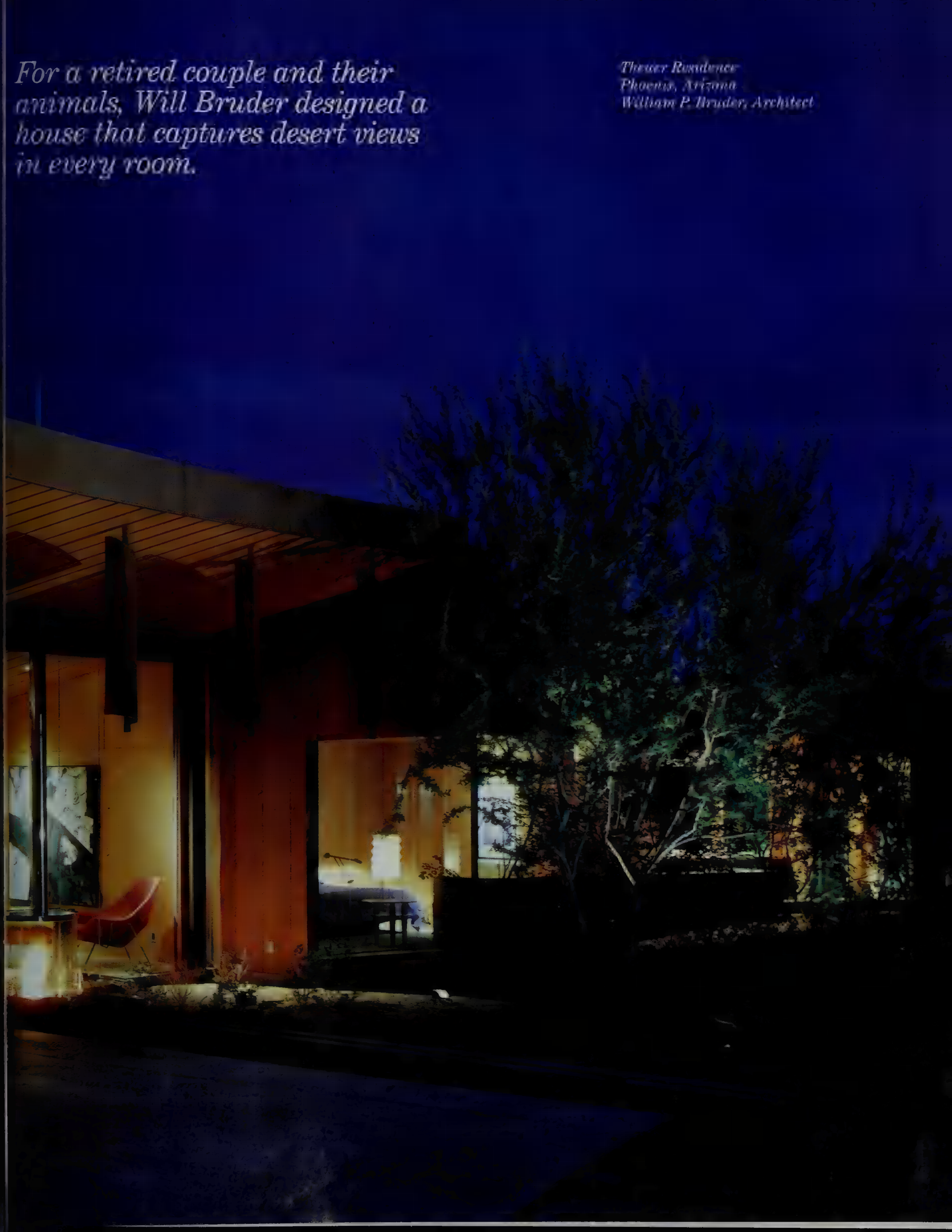
Phoenix, Arizona
William P. Bruder, Architect



Desert buildings are about sun and walls," states architect Will Bruder, who left his native Wisconsin for Phoenix in the early 1970s. An apprenticeship with Paolo Soleri and a lifetime appreciation of Frank Lloyd Wright have left Bruder with a keen eye for tying architecture to the landscape. For Robert Theuer, a retired airline pilot, and his wife Rhonda, Bruder designed a 2,500-square-foot house that embraces the rugged land in a sweeping curve. On one side of that curve is a desert garden, stocked with more than 40 species of local plants, while on the other lies a suburban wasteland of expensive tract homes. Relying on a simple palette of cinderblock, glass, weathered steel, and copper, Bruder erected solid walls facing the subdivision and glass ones looking north to the garden and the South Mountains in the distance.

Like traditional Southwestern houses, this one turns a weather-toughened face to the street and provides a sheltered forecourt only to those who have been allowed past the front gate. Although this inward-looking elevation contrasts with the more expansive north facade, it introduces many of the elements that give the house its character: bold curves, maintenance-free materials, and indigenous landscaping. Peeling away a concrete-block wall from the main house to form the forecourt, Bruder makes it clear from the start that this is an architecture of walls set in motion by the sun. And by hinting at what's to come, the architect has added a sense of mystery to the house's allure.

From the forecourt, the house reveals itself slowly. A recessed entry, designed as an elegant composition of glass planes set between a polished-concrete floor and a particle-board ceiling, draws the visitor indoors. Once inside, subtlety gives way to the spectacular view of the garden and the mountains beyond. Centered on a point 50 feet into the garden, the curving geometry of the north wall draws the eye to the outdoors. Ten-foot-high panels of half-inch-thick glass rise the full height of the wall, offering uninterrupted views.

"We wanted the outside in and the inside out," says Robert Theuer, "and Will certainly did a number on that." One example is a stainless-steel fireplace that sits half inside and half outside the glazed wall. Resting on a seven-foot-wide circular pan of water, the gas fireplace seems to hover between contrasting worlds.

Instead of having separate living, dining, and family rooms, the house has one great room that provides the free-flowing living space the clients had requested. Even the kitchen works as an extension of the living area, separated by only a slender cantilevered counter. The sense of spaciousness is heightened by the contrast between the 10-foot-tall, glazed wall on the north and the seven-and-a-half-foot-high masonry wall on the south. Adding a final touch of drama to the composition is a one-inch-high strip of clerestory window sandwiched between the cinderblock wall and the low ceiling.

The single-loaded-corridor plan ensures that all rooms face the garden and permit cross ventilation to help cool the house. Roof overhangs protect the house from the sun—three feet beyond the south wall and five feet beyond the glazed north wall. Further sun protection comes from a series of perforated-weathered-steel shade "sails" that hang from the roof above the covered garden terrace. A horse stable just west of the house and a dog run adjacent to the guest wing accommodate the clients' two horses and two Great Danes. Both for humans and animals, the house encourages what Bruder calls "desert living," a term that implies spending as much time outdoors as indoors. *Clifford A. Pearson*

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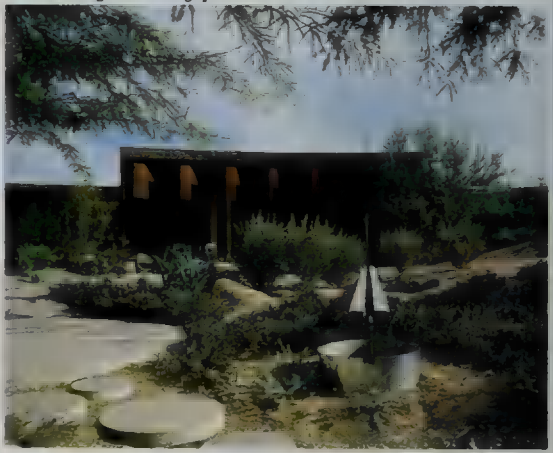
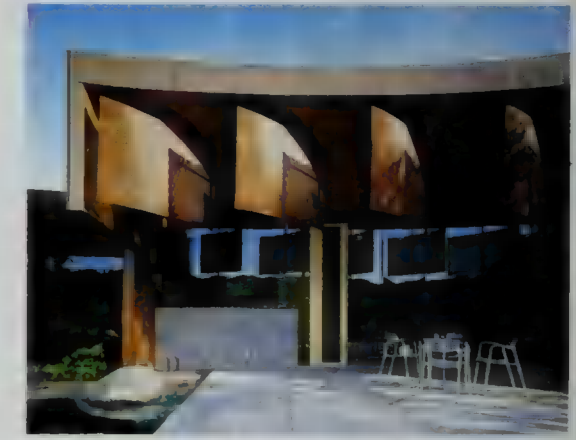
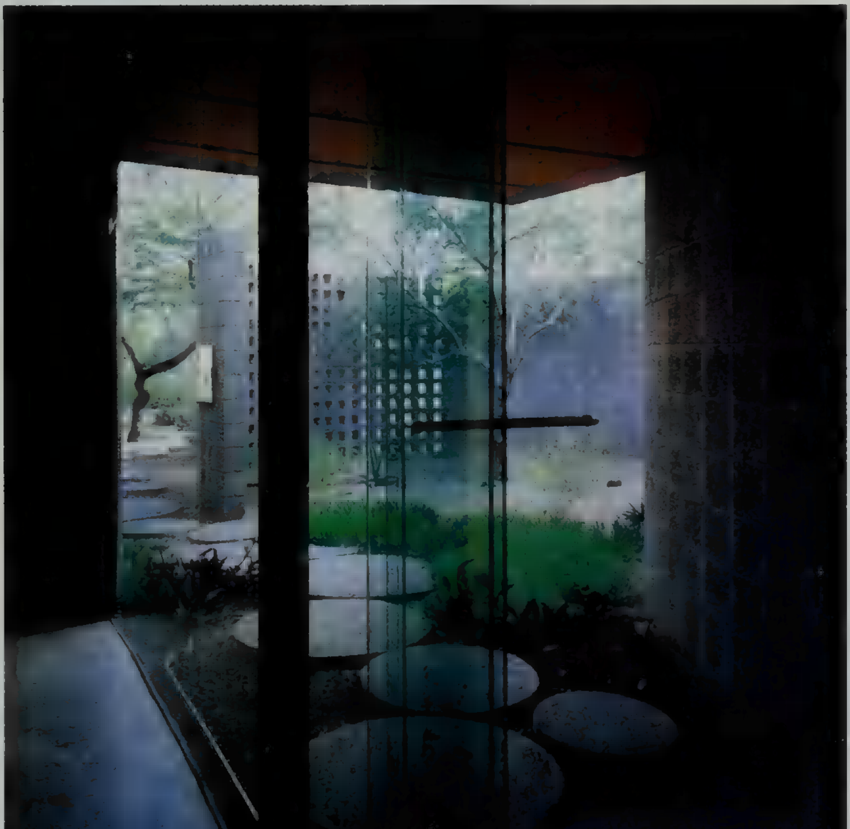
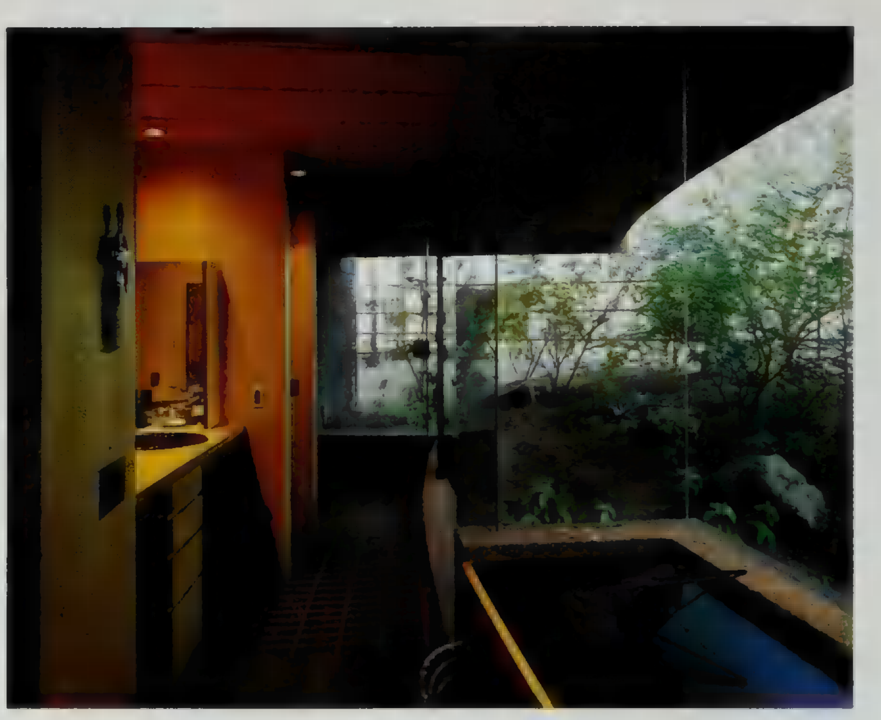




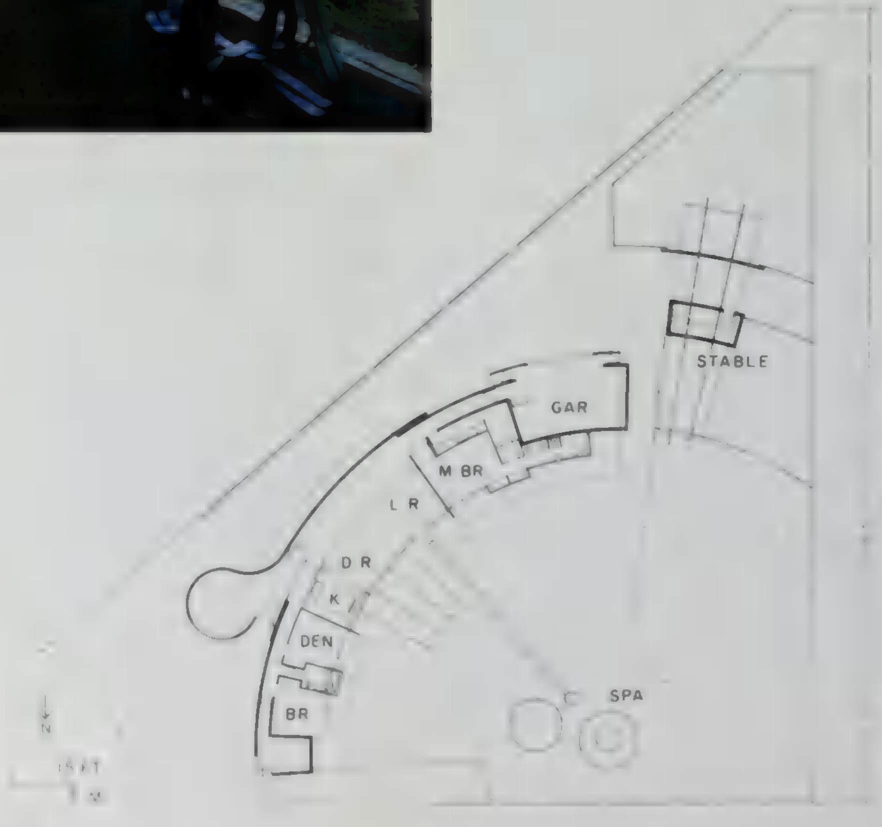
Built on a one-acre lot in a suburban subdivision, the Theuer Residence faces its neighbors with a set of curving masonry walls that only hint at what's inside (opposite top). A concrete-block wall with some blocks rotated so they create a perforated effect encloses an outdoor forecourt. The entry gate to the forecourt is made of punched weathered-steel (opposite bottom left), as are the curving shade "sails" protecting the garden terrace on the opposite side of the house (above). The recessed entry is a play of rough and smooth materials (opposite below right). The structural system combines wood framing, load-bearing masonry walls, and steel members along the glazed north wall (previous pages and top).





Heart of the house is a great curving room that includes living and dining areas, as well as a kitchen (previous pages). A particle-board ceiling with maple battens slopes up to meet the 10-foot-high butt-glazed wall overlooking the garden. Bruder relied on a simple palette of materials such as maple-plywood paneling and cinderblock for walls and polished concrete for floors. A snaking line of quarter-inch-thick stainless steel and "bush-hammered" concrete picks up the curving motif found in much of the house (previous pages).

A stainless-steel fireplace, set half indoors and half outdoors features a gas flame that seems to float on a seven-foot-wide pan of water (opposite). The water runs down a 50-foot-long trough slicing through the garden, then is recycled. The garden is planted with over 40 species of native plants and requires little watering. Because the house looks onto a nature preserve, even the master bedroom (bottom left) and master bath (top left) enjoy floor-to-ceiling glazing. A three-zone heat-pump system provides heating and air-conditioning.

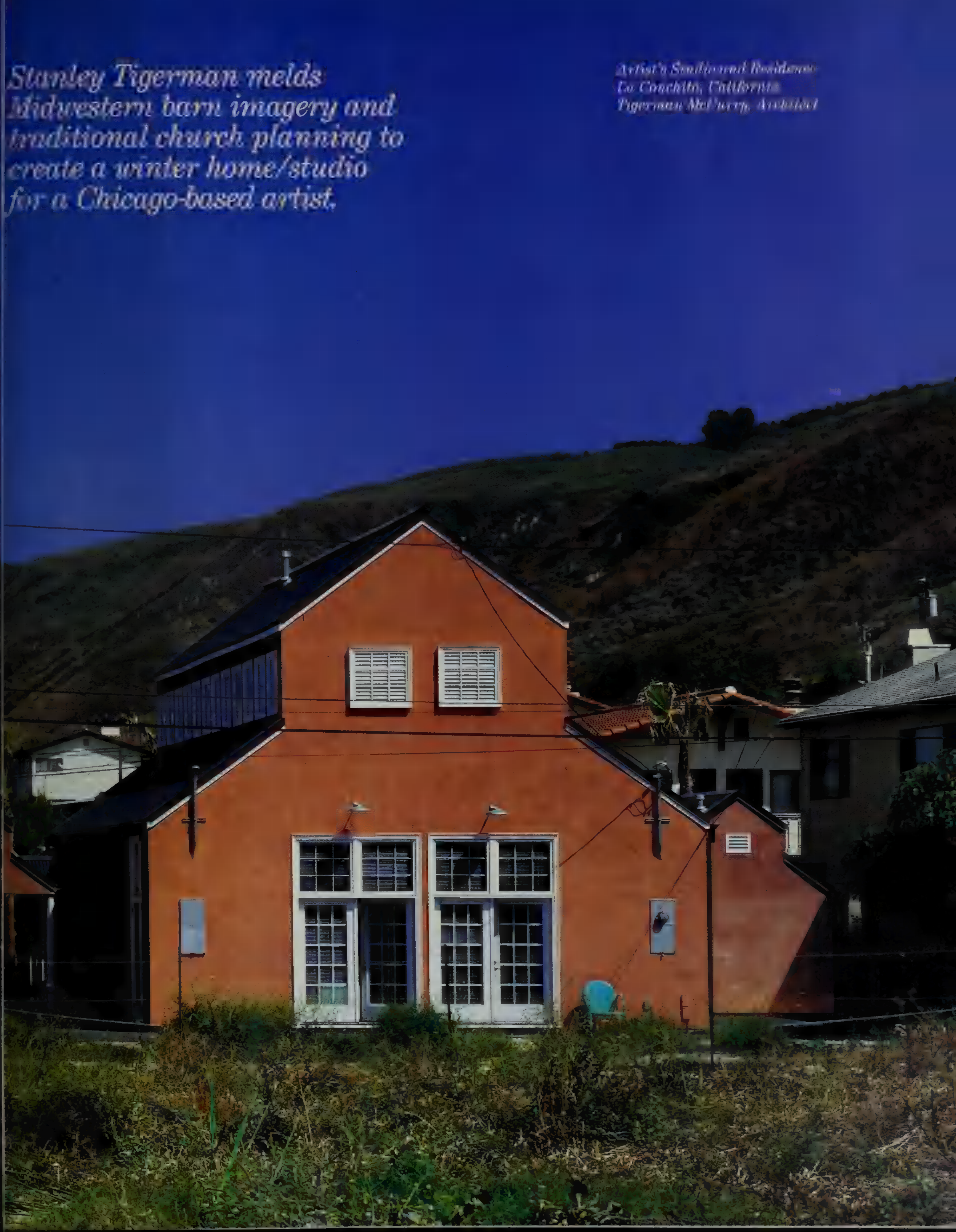


Credits
Theuer Residence
Phoenix, Arizona
Owners: *Rhonda and Robert Theuer*
Architect: *William P. Bruder, Architect—William Bruder, principal-in-charge; Wendell Burnette, Robert Adams, Tyler Green, design team*
Engineers: *Jack Trummer, JT Engineering (structural); Roy Otterbein (mechanical/plumbing)*
Consultants: *Roger Smith, Lighting Dynamics (lighting); Randy Hall, Ray Electric (electrical)*
Landscape Architect: *Christy Ten Eyck, The Planning Center*
General Contractor:
Owner/builder

Beachfront Basilica

Stanley Tigerman melds Midwestern barn imagery and traditional church planning to create a winter home/studio for a Chicago-based artist.

Artist's Studio and Residence
La Conchita, California
Tigerman McCurry, Architect

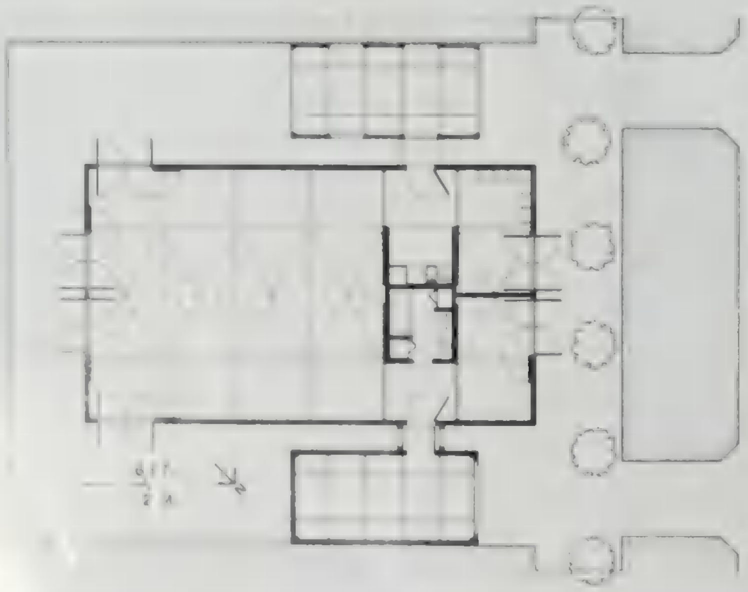


"His work depicts American life, not necessarily in a celebratory fashion but rather by exaggeration, presenting it in a way that enhances the uncertainty we have about it." Stanley Tigerman could be talking about himself—"a bit of autobiography creeps into all of my architecture," he admits—but in fact he is describing the paintings of Chicago-based artist Roger Brown, Tigerman's client for a 1,500-square-foot studio and winter home in La Conchita, California.

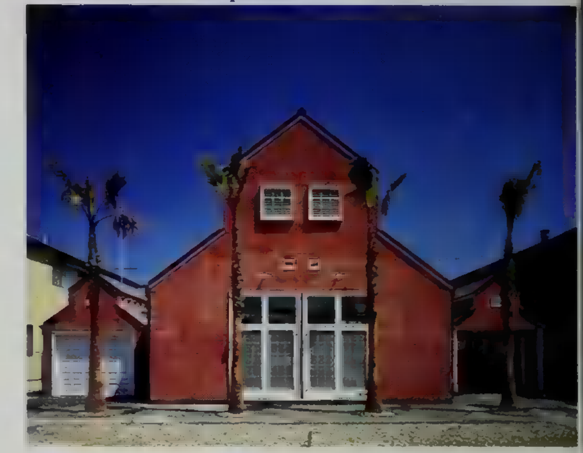
Tigerman also looked for inspiration to his own vacation house in Michigan, done in collaboration with partner and wife Margaret McCurry in 1983. Tigerman freely combined his own architectural history with established building types and construction methods to show, in his words, "how disgruntled I am with traditional architecture." His proposed alternative, a pink-stuccoed gambrel-roofed loft-house, is a new hybrid—one that, at first glance, seems out of place in its neighborhood of ramshackle beachfront bungalows.

Tigerman and Brown consider the studio a basilica; the neighbors call it a barn. As Tigerman points out, both structures provide similar amenities: large open space and generous natural light, which were prerequisites for Brown's paintings. Here the "side aisles" are used as a changing gallery for work in progress. A galley kitchen and bathroom core separate a small living area from a spartan bedroom; additional rooms were precluded by the small size of the septic tank, the only size permitted on a clay soil lot. Rolling garage doors close off the living area from the studio and both are aired by natural cross ventilation and giant ceiling-mounted fans. Instead of an altar terminating the space, windows and glass doors in the south wall provide sweeping views of the Pacific Ocean across nearby fields and a freeway.

Outside, Tigerman has attempted to integrate the exterior with its surroundings, what Brown jokingly refers to as "a hippy-dippy community" located 15 miles south of Santa Barbara, by planting a row of palm trees out front and finishing the wood-framed structure in a pink stucco intended to match the color of a nearby Mission church. There is a playfully surreal quality to the overall grouping of house, carport, and garage, heightened by the contrast of a galvanized metal roof and off-the-shelf doors, windows, and hardware—the combination is a gentle reminder of the "magic realism" of Brown's, and his architect's, work. *Aaron Betsky*



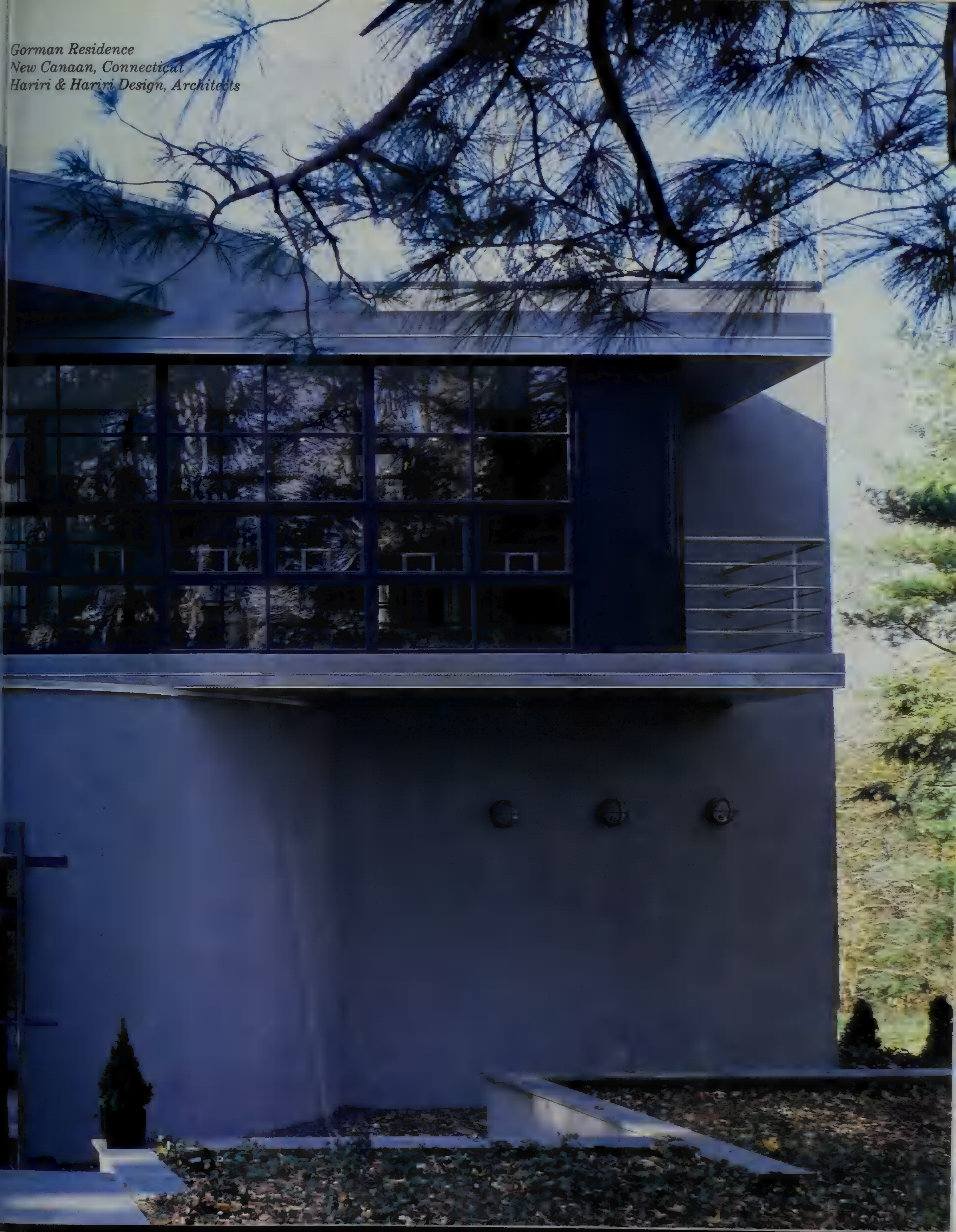
© Tim Street-Porter photos



Ready-made wood trusses cross the 30- by 50-foot loftlike space at regular intervals. A "view altar" oriented toward the Pacific Ocean is topped by one of Brown's crucifix paintings. The exterior color and the seismic tension rods connecting interior trusses offer clues to the house's California location.

Credits
Artist's Studio and Residence
La Conchita, California
Owner: *Roger Brown*
Architect: *Tigerman McCurry—Stanley Tigerman, Tom McKercher, project team*
Engineers: *D. B. S. Structural Engineering (structural); Al Nibecker & Associates, Inc. (mechanical); Tierra Tech Testing Lab, Inc. (soil/concrete)*
General Contractor: *Phoenix Construction Co.*

Sum of Its Parts


Gorman Residence
New Canaan, Connecticut
Hariri & Hariri Design, Architects

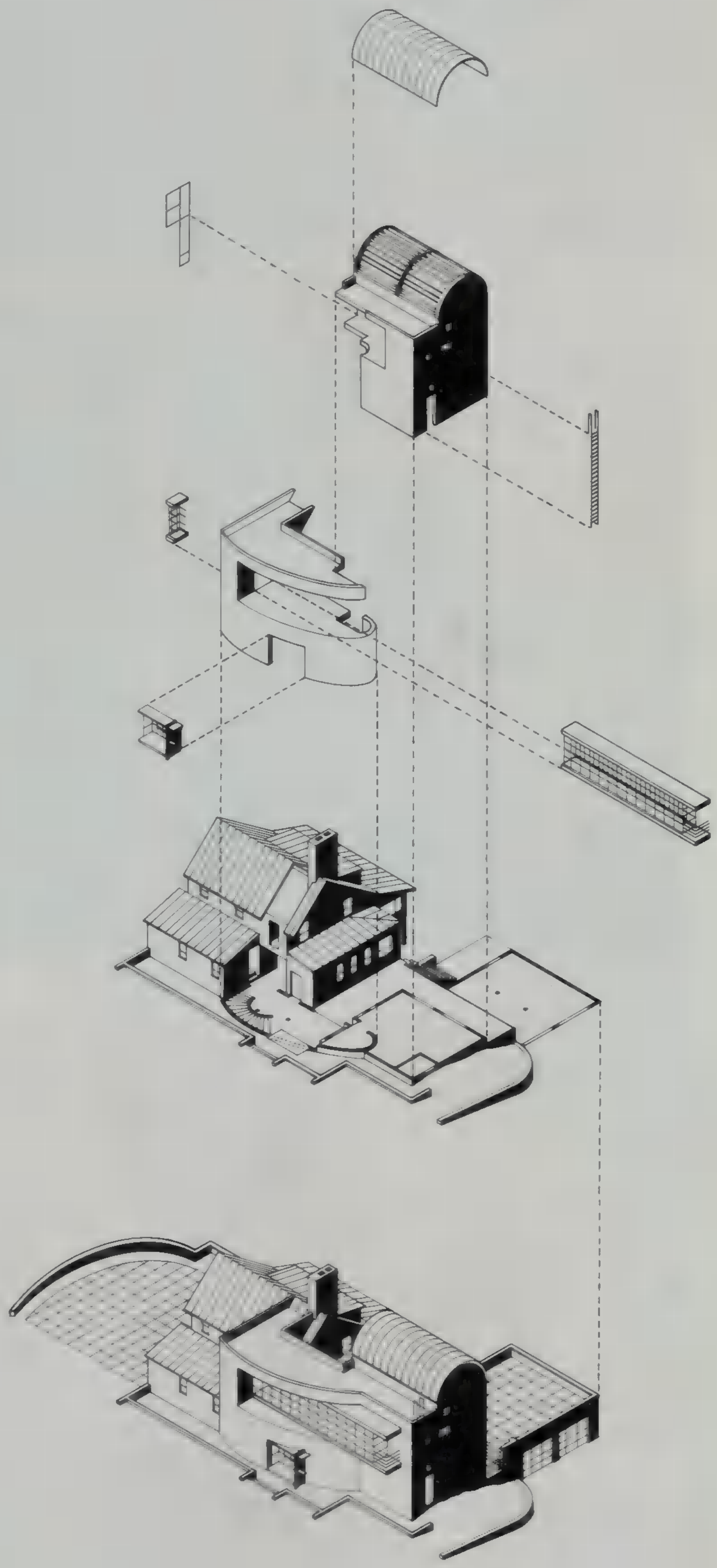
lthough made of different pieces—old and new, gable-roofed and barrel-vaulted—the Gorman Residence is greater than the sum of its parts. Faced with an early 1900s carriage house and the changes made to it over the years, architects Gisue and Mojgan Hariri added several major new pieces of their own design, making everything snap into place like a good jigsaw puzzle. While all the elements retain their identities, they fit together—visually and structurally—so that removal of one would imperil the whole.

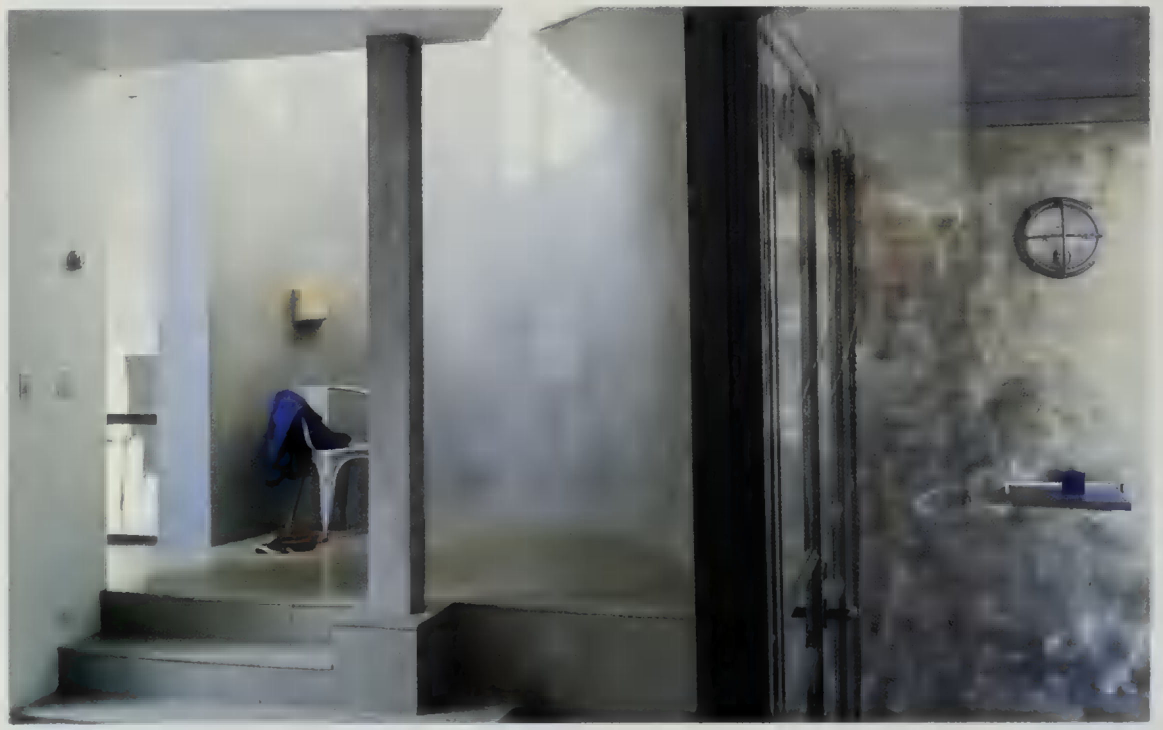
The project began with Donna and Geoffrey Gorman asking the Hariri sisters to add a second story to a freestanding garage and connect it to the 1,500-square-foot house. The architects also agreed to reconfigure circulation in the house, so the front door wouldn't lead directly into the living room. As the clients began planning for a family, the program grew. In the end, the Hariris recommended tearing down the garage, and building on its foundations a new two-story structure with a family room/den on the ground floor and bedrooms above. In the process, the garage would be pushed farther west and a new entry component would be inserted between the old house and the new family-room structure.

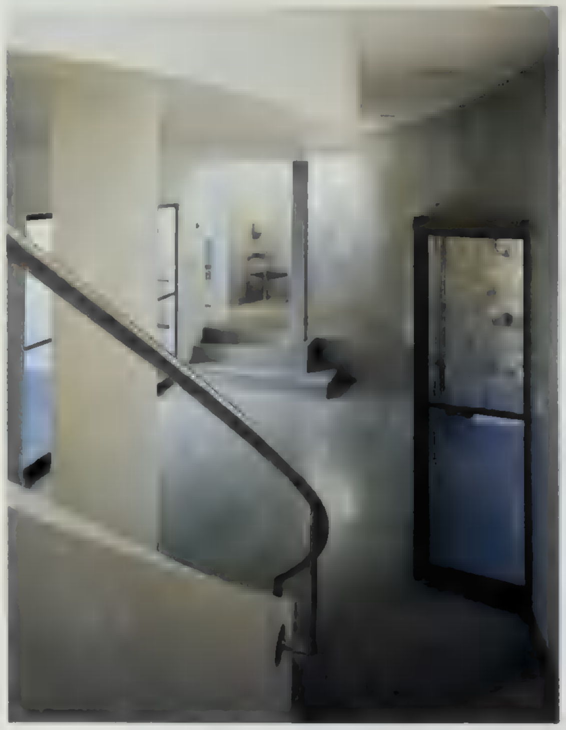
In designing the new elements, the architects kept in mind traditional New England building types. Thus, the family-room building became a "barn" with a barrel-vaulted roof and the connecting element became a "covered bridge" made of glass and steel. Built as a hybrid structure combining wood framing with some steel columns and beams, the new components overlap and penetrate each other so that part of the fun of walking through the house is marveling at how the pieces come together. A good place to appreciate this is inside the curving entrance hall (following pages) where a winding staircase on the south end leads to the second-story bridge and a set of three steps at the other end provides access to the family room. A column near the family room marks the southeast corner of the old garage foundations and helps support the new bridge, thereby serving as both a figurative and literal link between past and present.

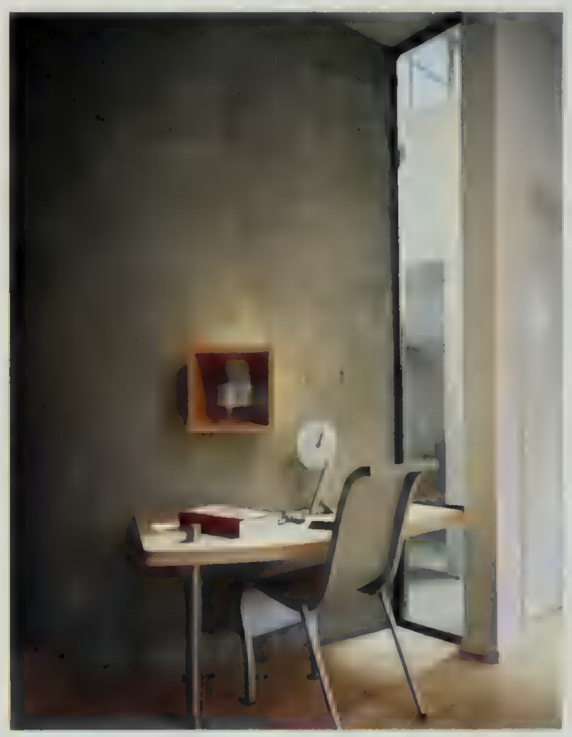
Uncomfortable with the ad-hoc nature of the existing house, the clients asked the Hariris to create more free-flowing spaces. Their response was to open the living room directly onto what had been an enclosed porch and what now serves as the dining room. Also added was a new glazed entrance at the south end of the living room that leads onto a generous terrace. "Simple surfaces and straightforward design give our work a machine-like quality," says Gisue Hariri, recognizing her debt to early Modern architects. "But we like to think that our use of space and our search for connections give it a spirituality and a concern with human psychology that were sometimes missing in early Modernism." *Clifford A. Pearson*

New components double the size of the house to 3,000 square feet. Old and new elements are finished with gray stucco, but each retains its own form and identity (opposite top). Connecting the old house with the additions are a second-story bridge (opposite bottom right) and a terrace on top of the new garage (opposite bottom left).





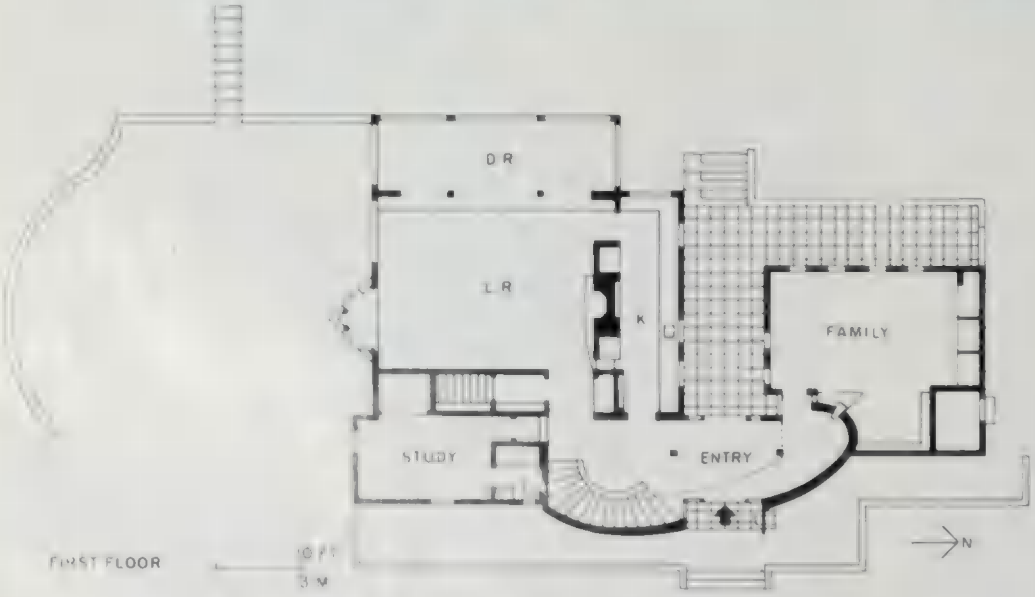




The curving structure between the existing carriage house an the family-room building serves as the new main entrance and as the connector between old and new (pages 76 and 77). Elements that link ol with new or inside with outside—such as columns, a winding stair, and a glass-and steel vestibule—penetrate the entry hall (opposite), reminding visitors that this house is a collection of parts.

Simple materials such as sheet rock, stone floors, and maple detailing give interiors a clean uncluttered look. Three steps lead up to a two-story-high space just outside the family room (top). Inside the family room, a wooden "viewing box" and a narrow strip of floor-to-ceiling glass make connections with the entry hall (bottom right).

Just as the glass-and-steel bridge slices through upstairs, the entry vestibule penetrates the curving facade of the entry hall (bottom left and opposite). The lead-coated steel roof of the vestibule continues inside as well as outside the hall.



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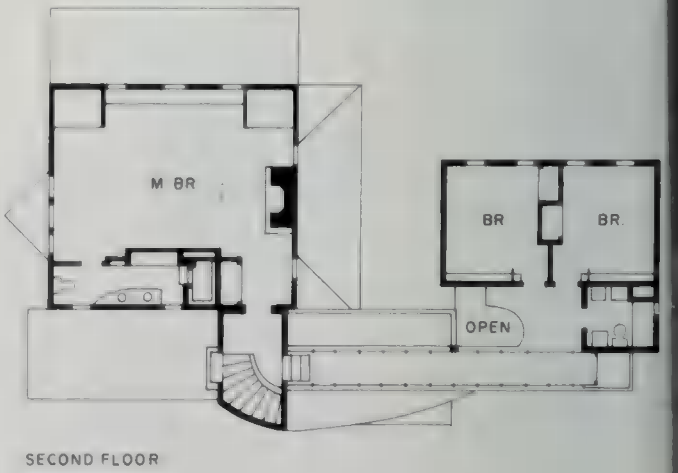

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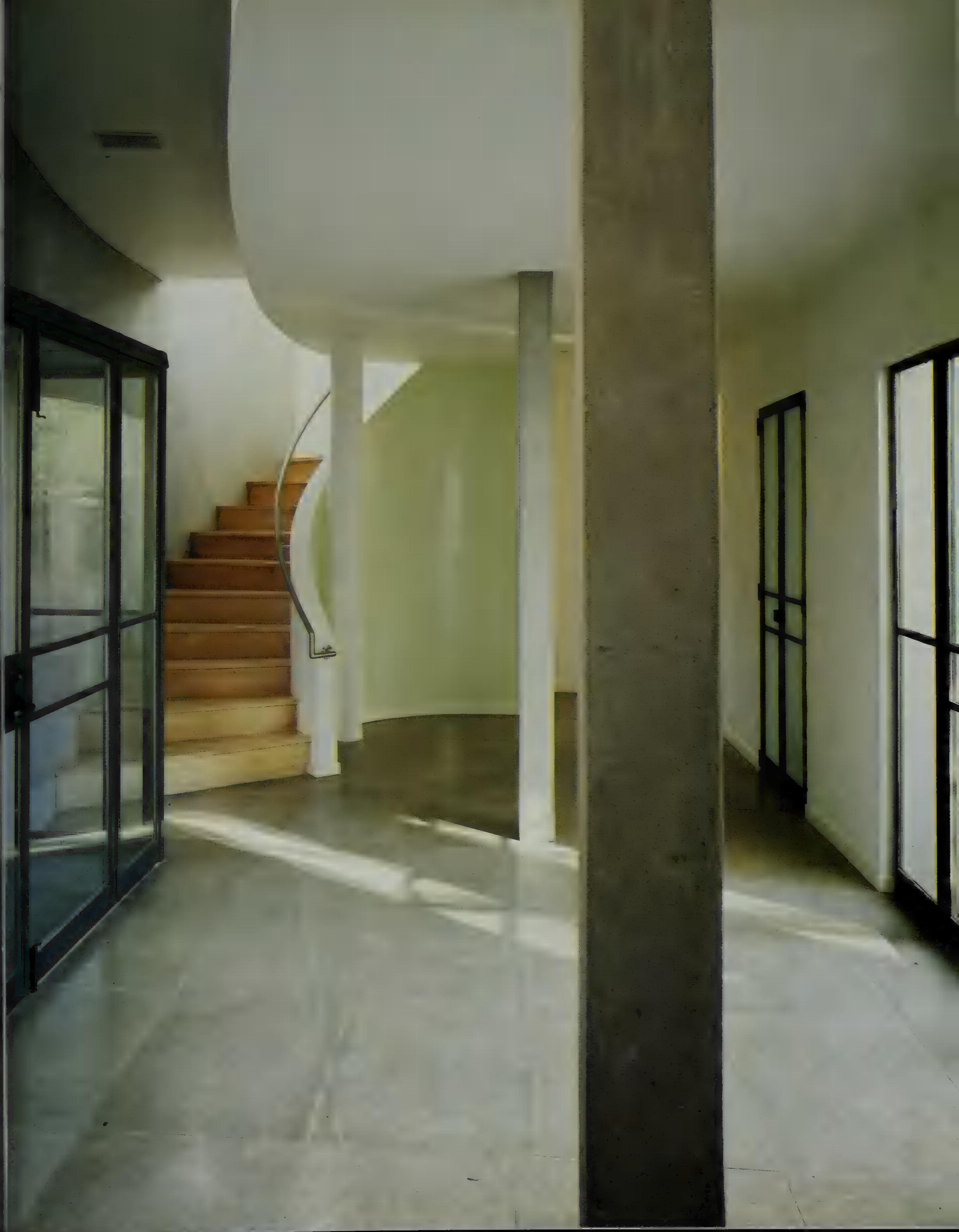

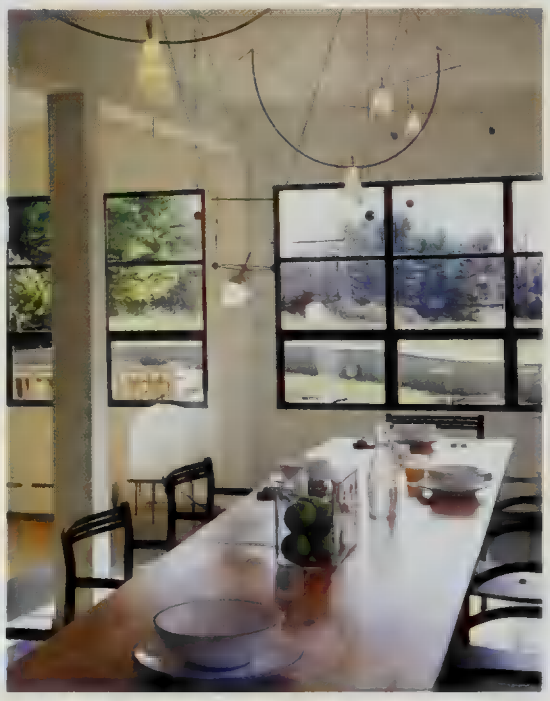

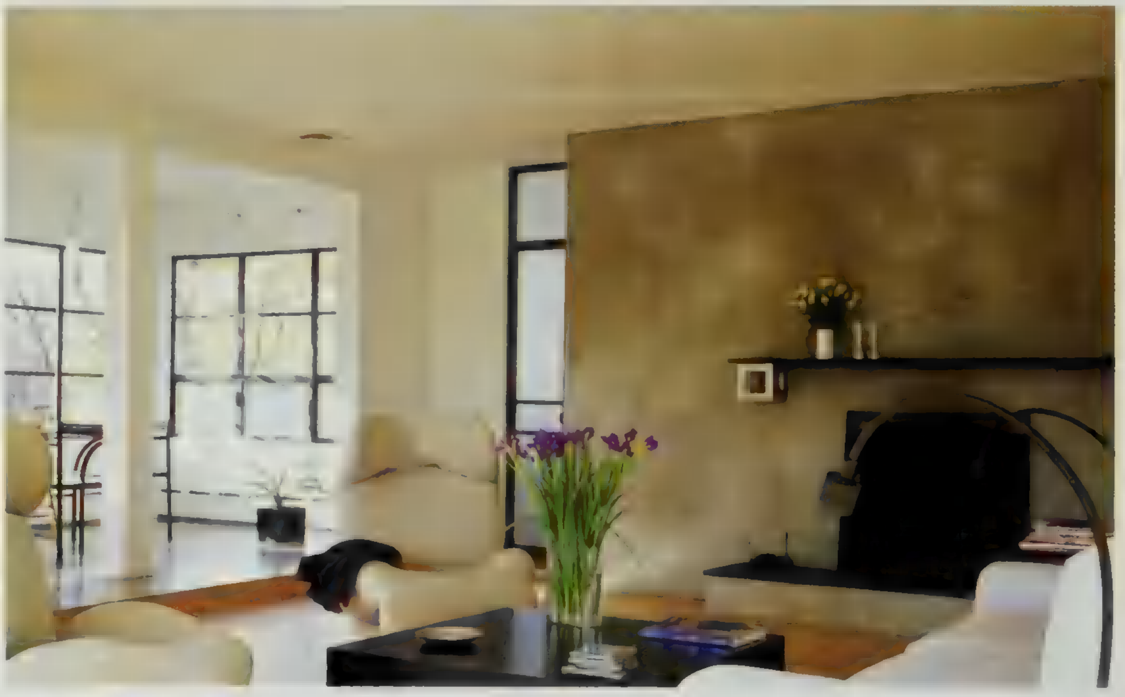

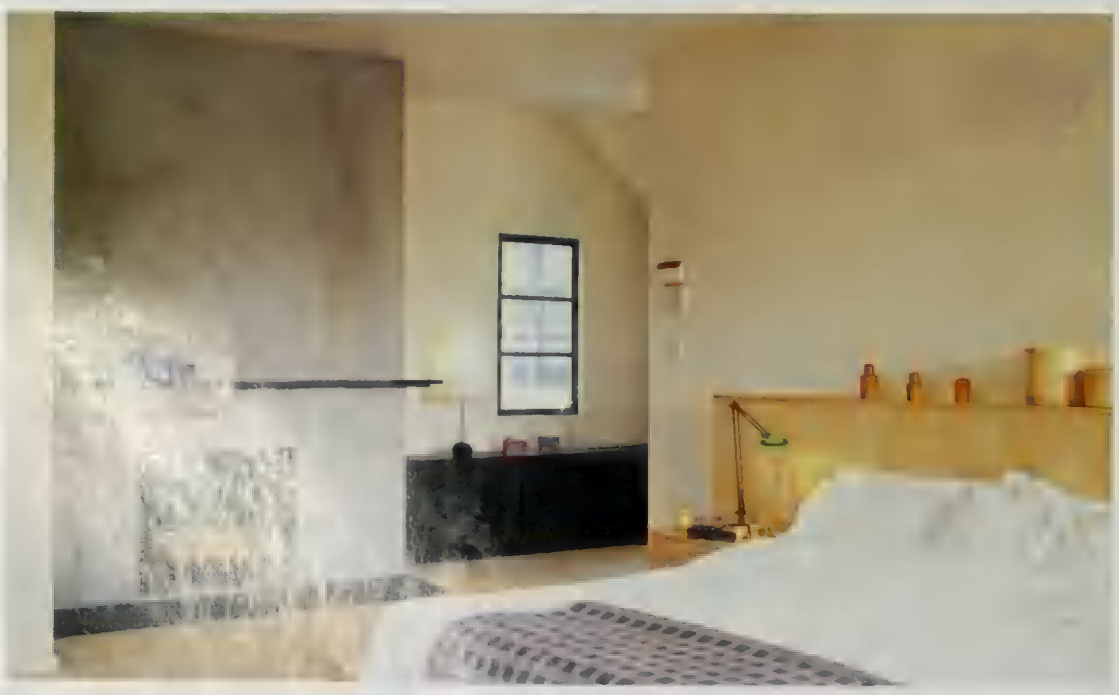

A glass-and-steel bridge (opposite) links bedrooms in the ne building to the master bedroo (left bottom) and the rest of th old house. The clients, a youn couple who had previously lived in New York City, asked the architects to remodel the old house with an eye toward creating loftlike rooms and eliminating old-fashioned detailing. Hariri & Hariri responded by opening the living room (left center) directly onto what had been an enclosed porch and now serves a the dining room (top left). Eve the kitchen (top right) has a sleek urban character. All windows in the house are steel casements. Central air conditioning is a split system witl coils in ceilings and a compressor outside.

Credits
Gorman Residence
New Canaan, Connecticut
Owners: *Donna and Geoffrey Gorman*
Architect: *Hariri & Hariri Design—Gisue Hariri, Mojgan Hariri, partners-in-charge; Paul Baird, Kazem Naderi, Andre Bideau, Yves Habegger, project team; William Wilson, model maker*
Engineer: *Ahneman Associates*
General Contractor: *GOL Construction*

Martin Residence
Kennett Square, Pennsylvan
Tanner Leddy Maytum Stac
Architects

ox Inside Box

The Martin house, situated in conservative Chester County, Pennsylvania, farm country, is a curious study in contrasts—a working couple returning East from San Francisco, he a molecular biologist, she an abstract painter, enlisted an architect known for free-flowing California-style high-tech (see RECORD HOUSES, April 1992, page 124) to design a house in a region known for 19th-century farm complexes with walls of 20-inch thick stone and hand-hewn oak tree trunks for beams.

If ever there was a case of eating your cake and having it too, this house is it. Respecting the 10-acre site of rolling land and the unwritten but powerful local dictates controling the facades of new buildings, the architects wanted to meet the owners' program of accommodating two careers, entertainment of large groups but with all affairs catered (no need for a huge country kitchen). So they simply inserted a new box inside an existing one (see drawing at right). (Of the various buildings on their site, the owners decided to make their home in the barn, restore the carriage house into a guest house, make the corncrib into a garage, add a new building up the hill for a painter's studio, and not purchase the farm house at all.) The new box, faced with cherrywood, is a self-contained structure, imposing no loads upon the rough stone shell. The three-foot perimeter space between the two boxes accommodates circulation, fireplaces, and intimate seating areas close to the light. The inner box carries all structural loads, either on a series of square steel tubes or wide flange posts (depending on the floor), with built-up steel beams, as well as wiring, heating, and plumbing distribution.

The only modifications to the stone shell occur at the entry, a steel-plated box that penetrates the stone envelope; on the opposite side, where a large veranda leads off the main living area; and the enlargement of what is known in those parts as "wind eyes"—small rectangular unglazed holes in the wall originally designed for cross-ventilation, and now enlarged into small windows to provide surprise peeks at the landscape. There's also a smooth steel-faced cylinder evoking a silo (opposite page); there is a real silo on the opposite side, but it's empty and may see use at a future date to store wine. The cylinder houses a mudroom at ground level and a bathroom above.

The tricky challenge of connecting the new structure with the picturesque original is shown at its most imaginative in the great central atrium (following pages). Leading off the living level are small reading and study spaces, with sliding doors left mostly in the open position but available for privacy. The most dramatic gesture is a bold steel and glass bridge (you can see the underside, top right, following pages). The bridge connects the generous master bedroom, with its southern exposure, to the bath and dressing spaces. The intent was to preserve the lightness of the open space by moving bedroom and bathroom to opposite ends of the house and not disrupting the central atrium.

The owners enjoyed every moment of the experience. Says Kathleen Martin: "The process was as exciting as the building. There were no [illegible]. We imposed no ideas on him." The architects had designed an earlier house for them back in San Francisco—[illegible] warehouse that gave their high-tech leanings full sway. This time, the challenge was different. Yet the result manages [illegible] out of two contrasting styles. Oddly enough, it's the Modern, with its lucid, crisp, cool use of industrial materials and sharp forms, that has the upper hand.
Stephen A. Kliment

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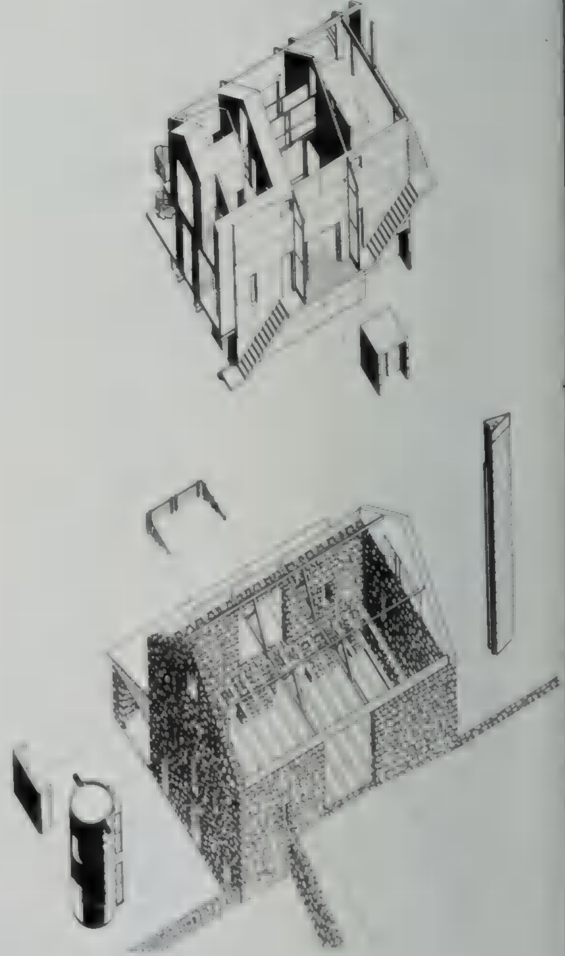
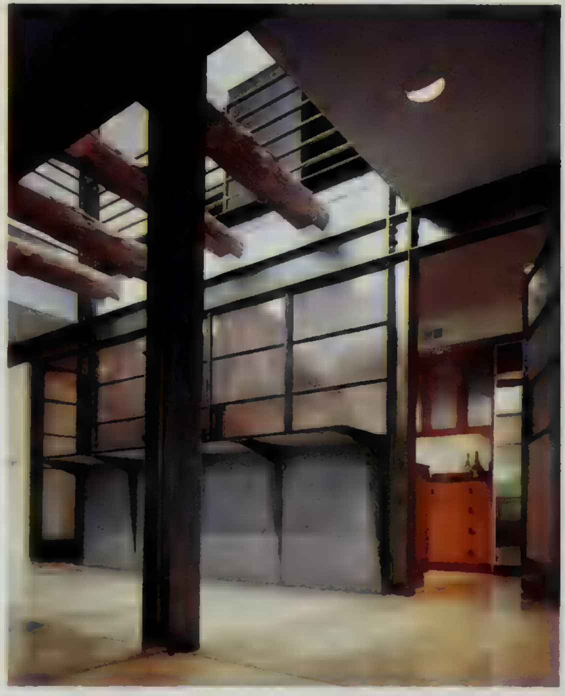
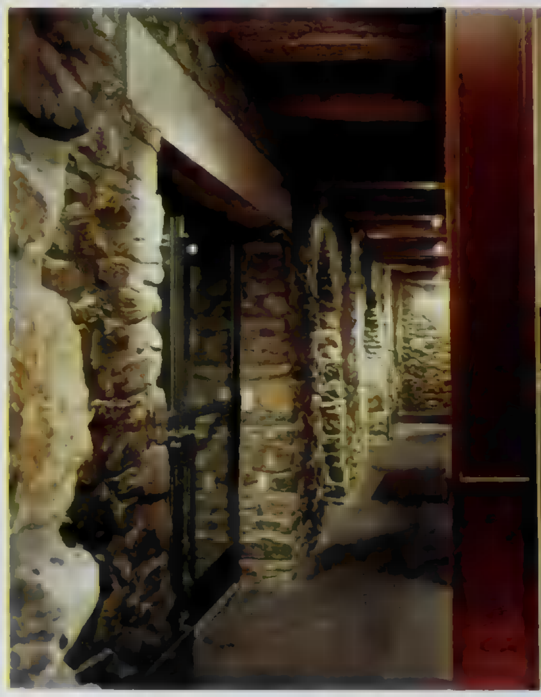
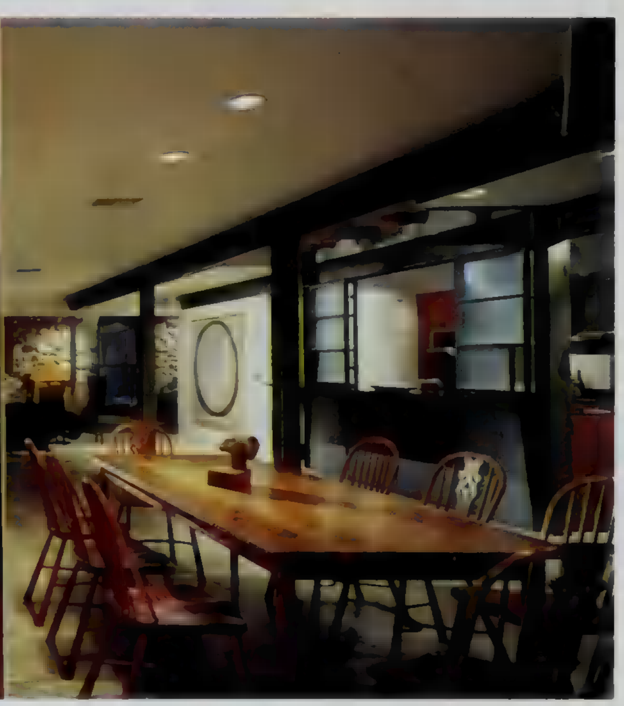


Main entry to the 3,500-square-feet barn-turned-residence is through a metal box that penetrates the 20-inch rough stone walls (top). The architects inserted a cherrywood-finished, self-supporting box inside the old stone barn (drawings, above), with the space between the two for circulation. Ancient wind-eyes were enlarged to become windows (opposite). The steel-coated silo-like cylinder contains a mudroom, with a bathroom above.

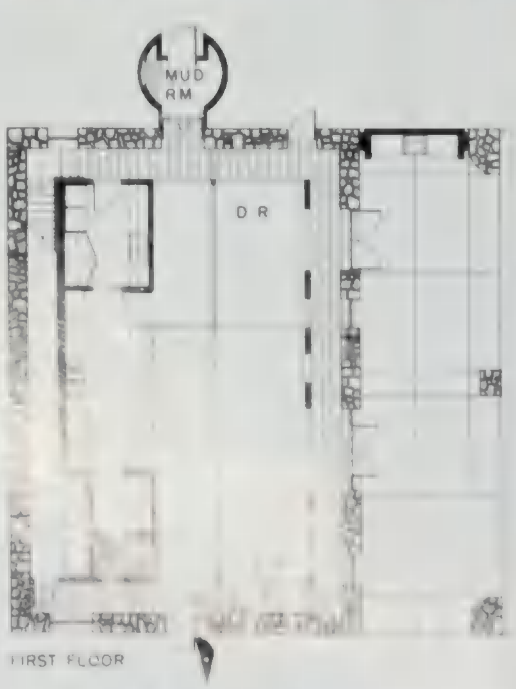






A central atrium connects th three levels (far left and opposite page). Boxy chairs and a coffee table are by the architects, and are supplemented b early American heirlooms such as a bench, a hinged tabl and bookstands. Frequent entertaining occurs on the lowe level (left and lower left). The kitchen is separated from dining by a custom-made metal-framed glass partition, with a cantilevered granite serving surface. Access to a large barbecuing terrace is through the stone wall to the left in lower photo. The house is heated by radiant hot water—partly by vertical panels, partly by pipe embedded in the lower level floor. Water is piped from a natural spring shared with tw neighbors.

Credits
Martin Residence
Kennett Square, Pennsylvania
Owners: *David and Kathleen Martin*
Architect: *Tenner Leddy Maytum Stacy Architects—William Leddy, partner-in-charge; Craig Edwards, job captain; Joanne Kennedy, Douglas Gauthier, Kim Kwan, project team*
Engineers: *Robert Chagnon (structural); Gary Debes (mechanical)*
General Contractor: *Mobac, Inc.*



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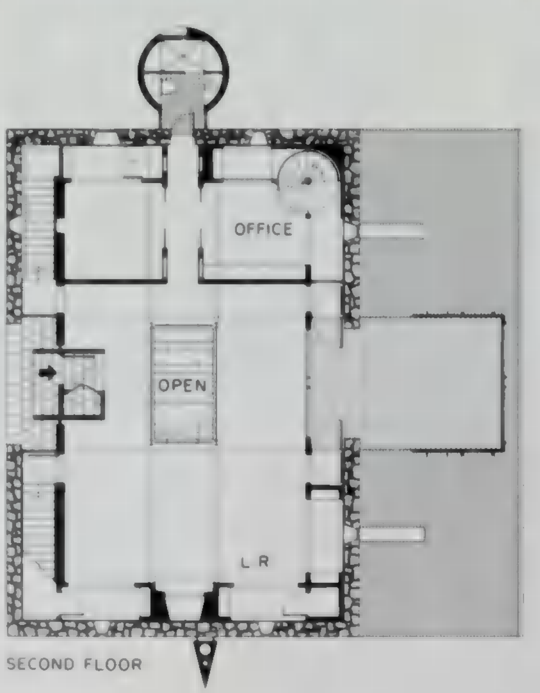

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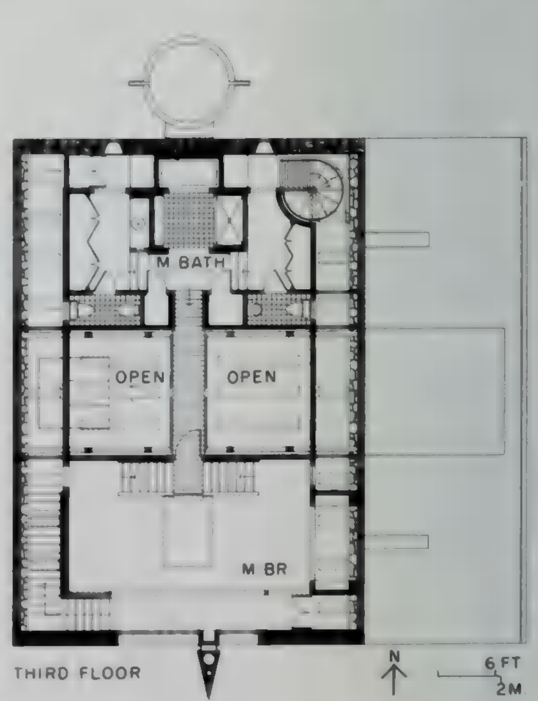
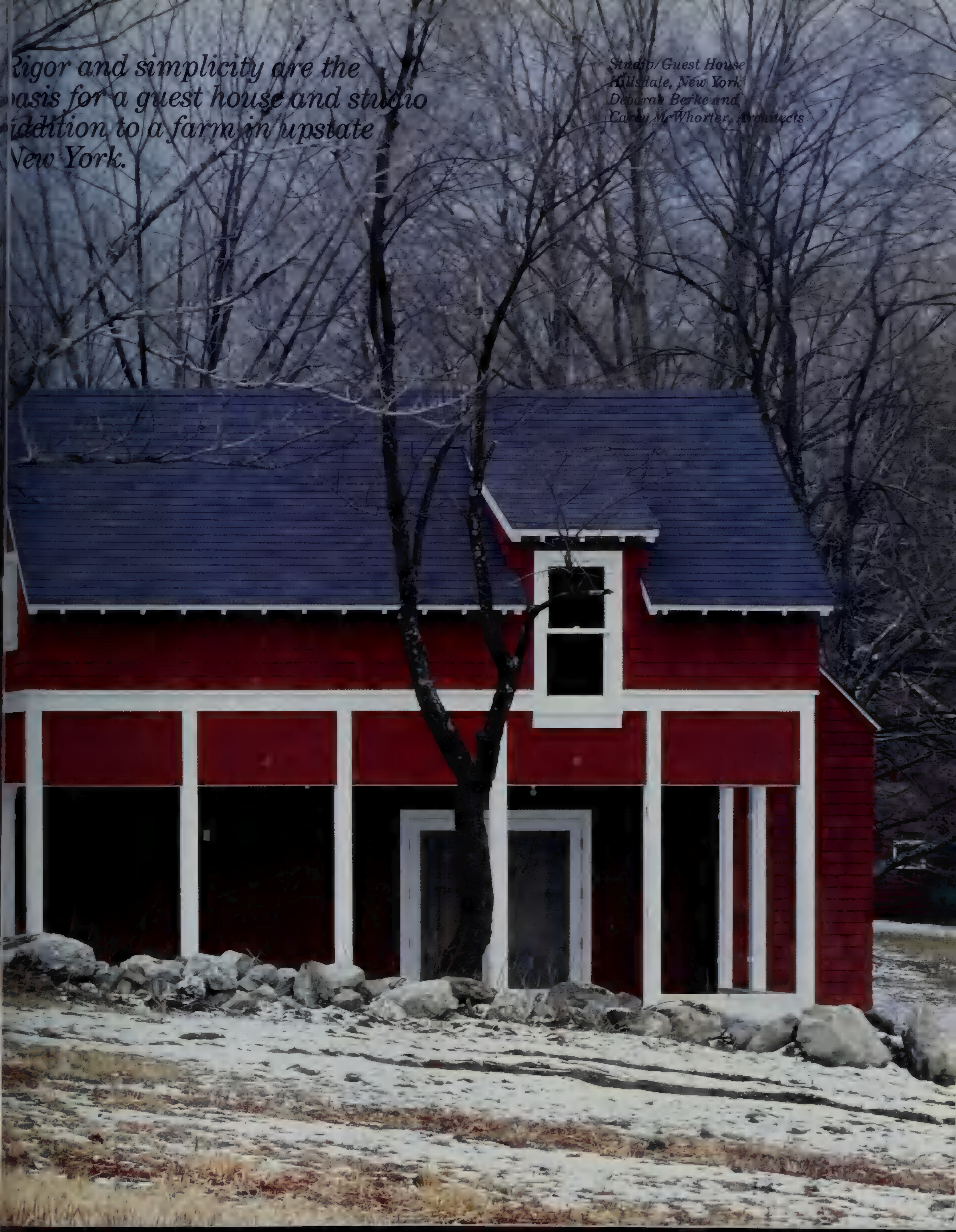


THIRD FLOOR

A Working House



Rigor and simplicity are the basis for a guest house and studio addition to a farm in upstate New York.

Studio/Guest House
Hillsdale, New York
Deborah Berke and
Carey McWhorter, Architects

The program was deceptively simple: a modest-sized structure with enough space for guests, a painting studio, and holiday gatherings that would complement a 19th-century farmhouse on a 100-acre property in upstate New York. Architects Deborah Berke and Carey McWhorter's response blends with farmyard vernacular without aping it, thanks to the rigorous purity of its forms. Clients Peter Halley and Caroline Stewart's requirements initially seemed at odds with each other. He, a painter and leading proponent of the "Neo Geo" movement, grew up in a cramped Manhattan apartment craving wide-open loft space. She, raised on a Louisiana plantation, wanted a traditional farm compound and a porch. The architects accommodated them both within 1,500 square feet and a tight budget.

The hillside site facing the Berkshires is in the path of run-off streamlets, which created water-drainage complications. The architects constructed an arching curtain drain; filled with rocks and gravel, it draws water around the house before it resumes its course to a pond downhill. To anchor the structure, Berke and McWhorter set the north end into the gradually rising slope, merging building and land much the same way as the main house burrows into the hill. Only the lawn in front of the porch was leveled to create added usable outdoor living space.

The house is a three-part volume comprising porch, studio, and bedrooms. Materials are limited to shingles, sheetrock, plywood, and tongue-and-groove joined pine, but are used differently to express each of the parts. The studio is clad in shingles with four 8-foot 6-inch windows set flush into the eastern facade; by contrast, the guest house has vertical siding with 16-inch-deep window sills. The porch facade, topped by a cathedral-ceilinged bedroom, is the most complex composition. Here, the window sill of the gable intersects the wood framing of the porch, which rises above the base of the upper floor to dramatize its nonstructural role.

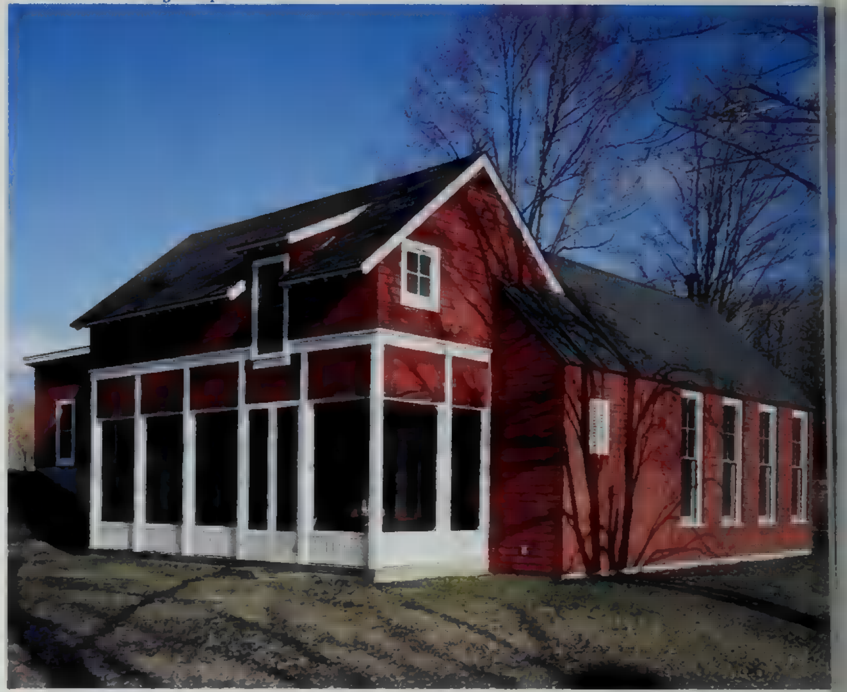
While the exterior clearly suggests a condensed farm compound, the interior has the spaciousness of a loft combined with the simplicity of a Shaker meeting house. Given the straightforward plan, there is a richness in the careful detailing and spatial contrasts. For example, the porch does not enter directly into the large studio; instead, passage is interrupted by a hall that turns into a staircase, its slow rise paralleling the nearby hill. The staircase to the bedroom over the porch appears to be cut out of the wall (opposite bottom); its steep grade is reminiscent of kitchen stairs in New England farmhouses. A sequence of two guest bedrooms and a bath off a long hall at the top of the graduated stair completes the plan. In these rooms, the windows, though smaller than those in the studio, admit generous east and west light.

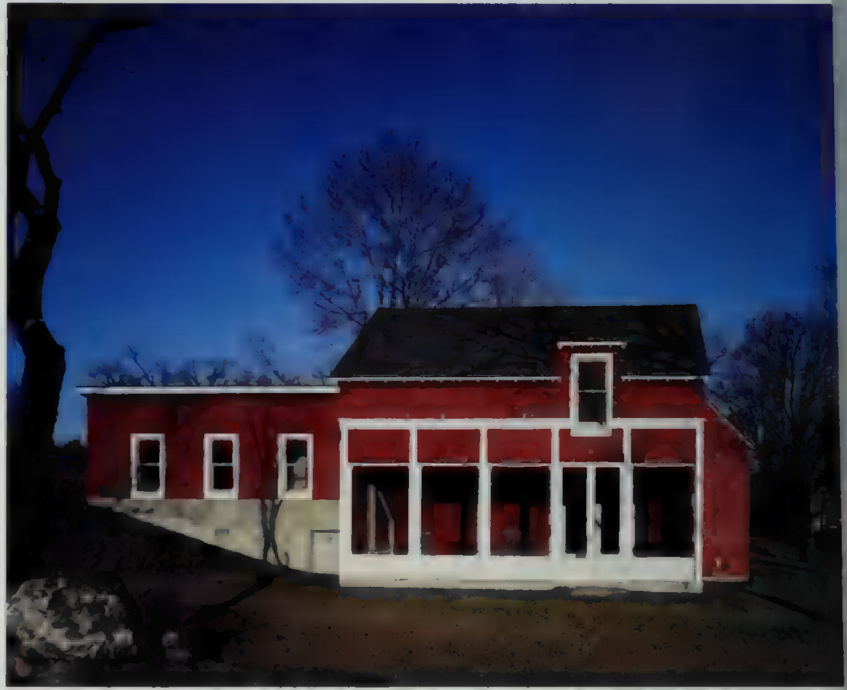
Berke and McWhorter relied on such old-fashioned ventilation methods as high ceilings and small windows, and sited the house to take advantage of two shade trees. It is with such seemingly conventional gestures that the architects reveal the power of simplicity.
Julie Iovine

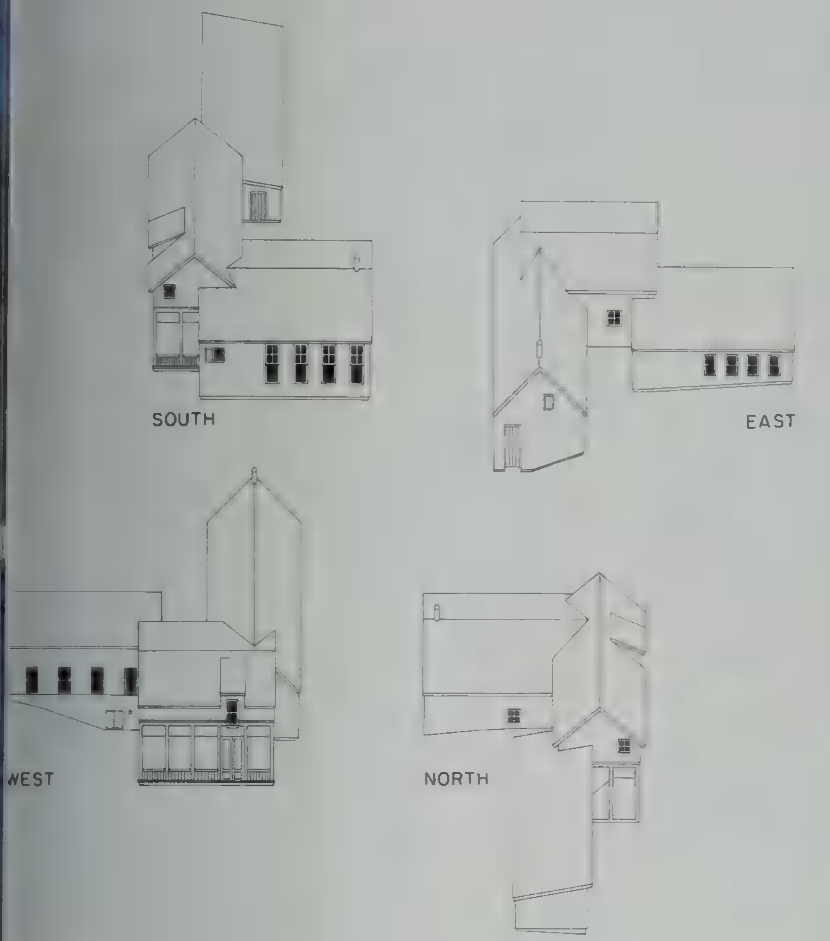
Julie Iovine is a New York City-based freelance writer.

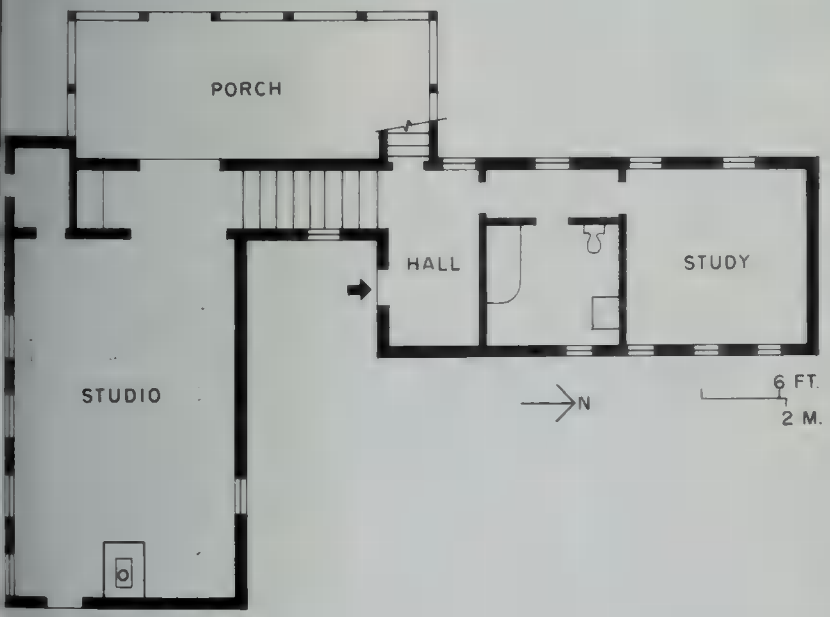
[illegible]
Studio/Guest House
Hillsdale, New York
Owners: *Peter Halley and Caroline Stewart*
Architects: *Deborah Berke and Carey McWhorter, Architects*
General Contractor: *Nomadic Builders, Inc.*

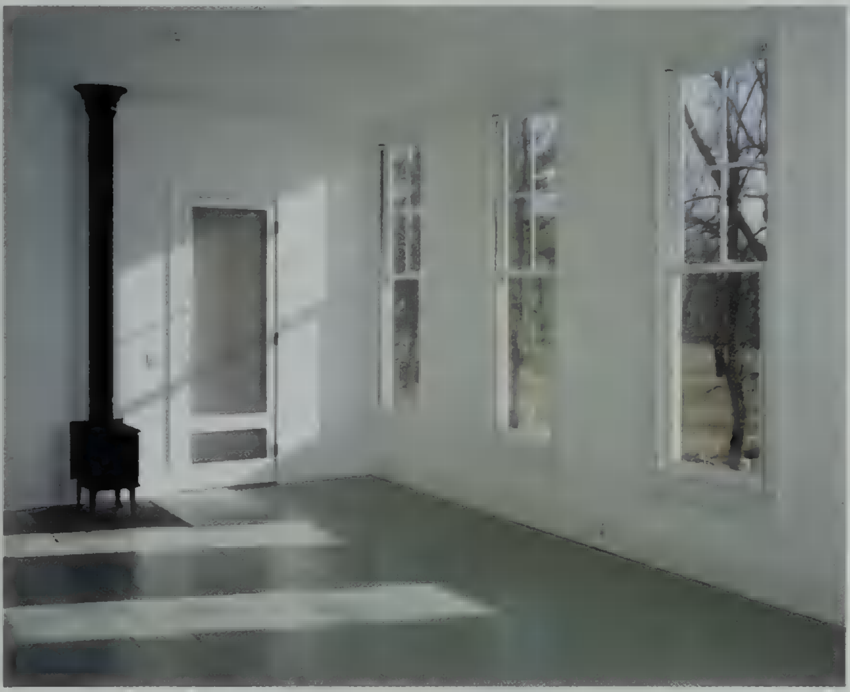
© *Catherine Bogert photos*

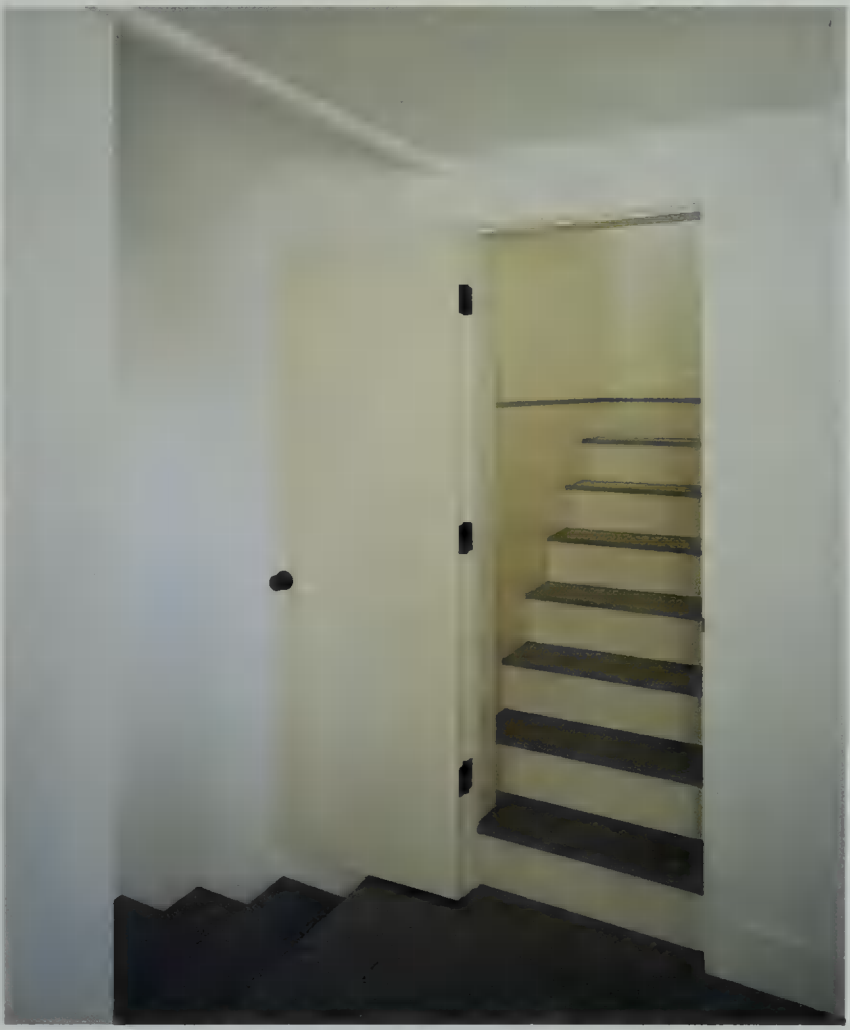








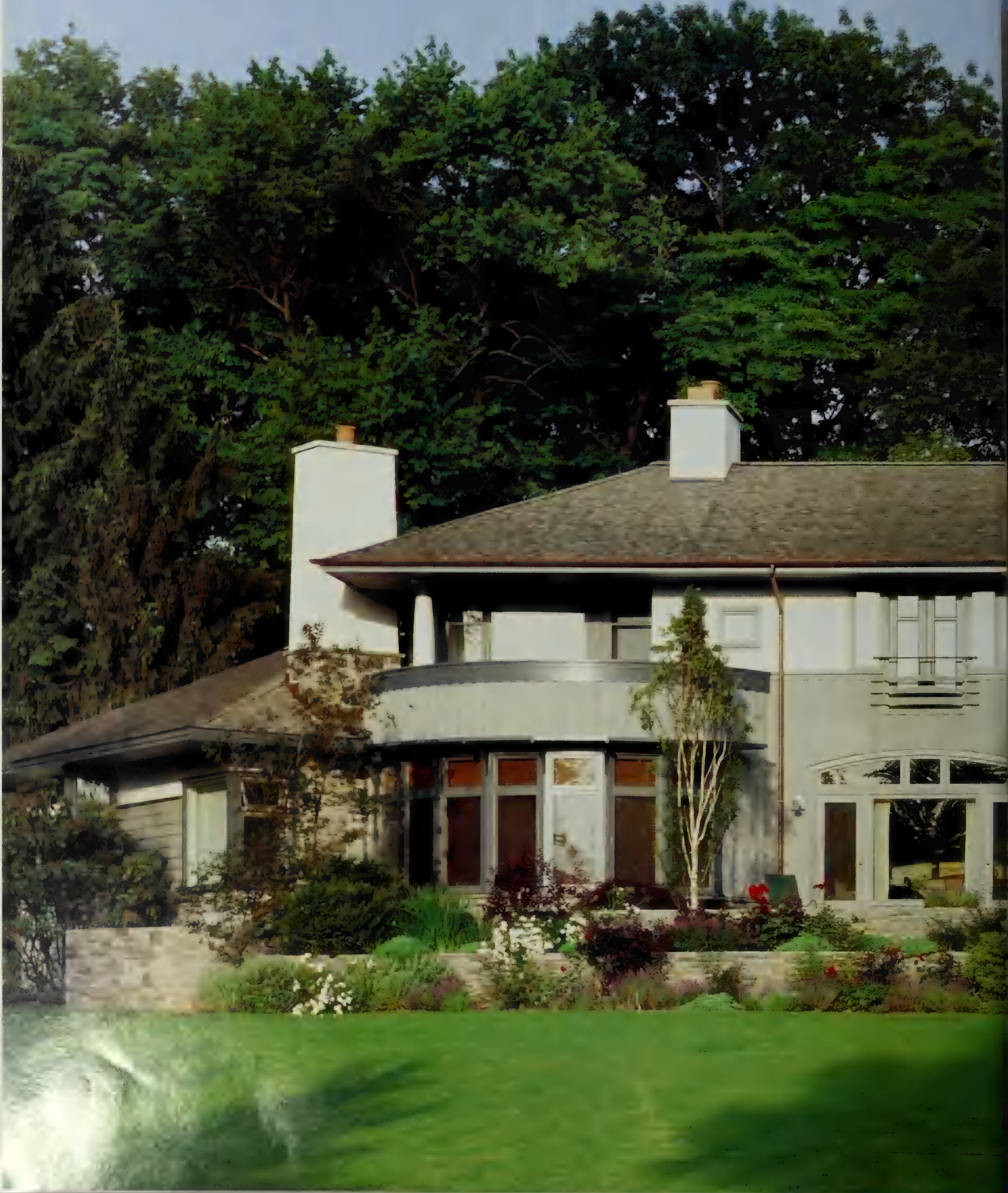




Berke and McWhorter achieved the effect of a compound by interlocking three volumes with distinct functions. The porch elevation (opposite, top and center) has a single gable, while a shed-roofed portion (opposite, bottom) of the building contains two guest bedrooms and a bath. The architects originally envisioned a single large window for the studio/gathering room, but their client artist Peter Halley said that he preferred windows like those in New England Congregational churches (top). Two stairs meet on a landing between studio and the guest-bedroom wing (bottom).

Breaking the Box

Westchester Residence
Westchester County, New York
Bentley LaRosa Salasky,
Architects and Decorators



Though the house shown in these pages hardly looks experimental, it is the culmination of a 10-year exploratory process by Bentley LaRosa Salasky. The partners departed early from their minimalist roots, and the work is now neither archeological traditionalism nor tied to the trend of the moment—a quality that intrigued the clients. "What always comes up when Postmodernism is debated is that people are comfortable with tradition," says Ron Bentley. "But people also want what Modernism offers—large expanses of glass, interlocking space, outdoor orientation." The architects haven't chosen one approach over the other, Bentley explains. "We try to make people comfortable, yet work with [Modern] aspirations."

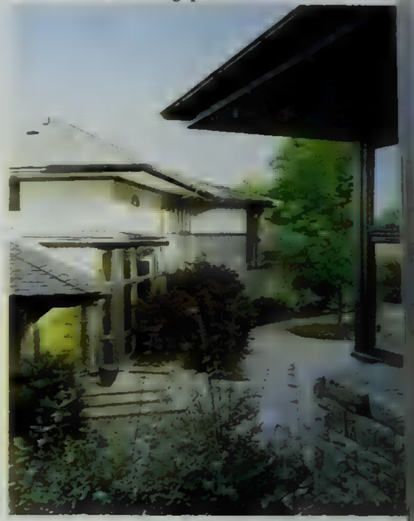
Having long and often walked the four-acre site together, the clients asked the architects to tuck the house into the highest corner to command a sweep of greenery studded with mature specimen trees and shrubs planted by a previous owner. (Landscape architect Billie Cohen collaborated in the substantial editing effort.) To take advantage of this "garden gone wild," the architects found inspiration in the "butterfly" plans drawn by turn-of-the-century English architects to unify house and landscape for a then-new suburban clientele. Bentley LaRosa Salasky's version anchors the house to its site with a central block containing the main living areas; the wings are hinged to form a graveled auto court to the west and reach into the expansive garden to the east. The visitor sees the house obliquely both entering and leaving (opposite top). This "picturesque" experience emphasizes the design's abstract, geometric qualities—a distinctly "Modern" experience.

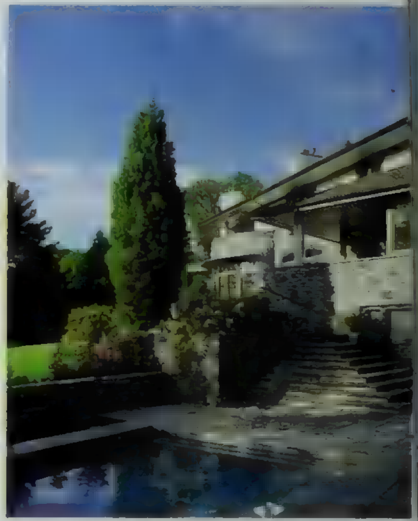
The punched, symmetrical windows and massive, attenuated chimneys of the central block (suggestive of country-house antecedents) counter the horizontal proportions, low-sloped hip roofs with deep eaves, and glazed and carved-away corners, all of which bring to mind Prairie-School Frank Lloyd Wright (preceding pages). As with Wright, there is a constant interplay between exterior and interior. The living room, exaggerated in the house's massing, commands the most sweeping view. In plan, the room is a simple rectangle, but the architects have left the corners open, leading the eye to the complex interlocking spaces beyond, and permitting fingers of sunlight to penetrate indirectly virtually any time of the day.

In details, there is also a tension between Modern and traditional. The symmetry of the main volume is emphasized through its hipped roof and vertical board-on-board siding. Yet this same volume is visually pulled apart by the overscaled window wall at the entry (top photo) and eroded by the curve in the bow-windowed den (opposite top). The house evokes but never quotes. At every turn, says Sal LaRosa, "We asked, can we transform this element, imbue it with another life?"

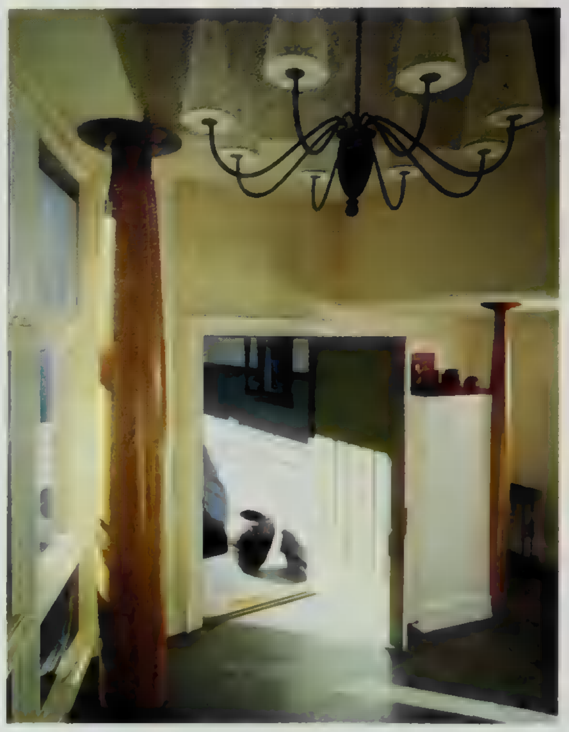
Equally at home with decoration and architecture, the designers developed and restated themes at an extraordinary variety of scales. A custom chandelier, reworked, is a sconce. Japanese proportioned "French" curves defined a family of profiles used for crown moldings, [illegible] the mantel, column capitals, and cabinet tops; it's [illegible] wood "linenfold" paneling. Likewise, painted [illegible] reappear on the interior, slightly altered in proportion, [illegible] detailed in oak and mahogany with a "capital" of [illegible]. The near-obsessive scope of the design seems at odds with the words the architects use to describe what they hoped to [illegible] "simplicity," "composed," "unself-conscious." That this house [illegible] has always been there—while looking like no other—testifies to [illegible] success. *James S. Russell*

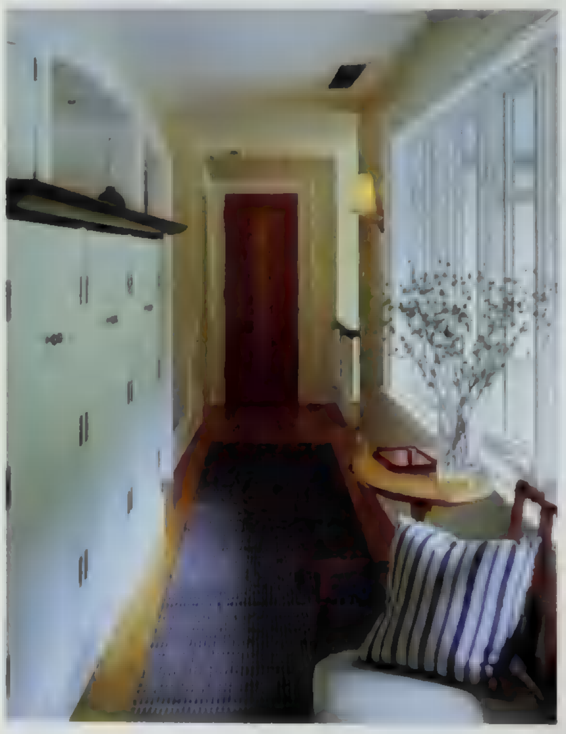
© *Michael Mundy photos*

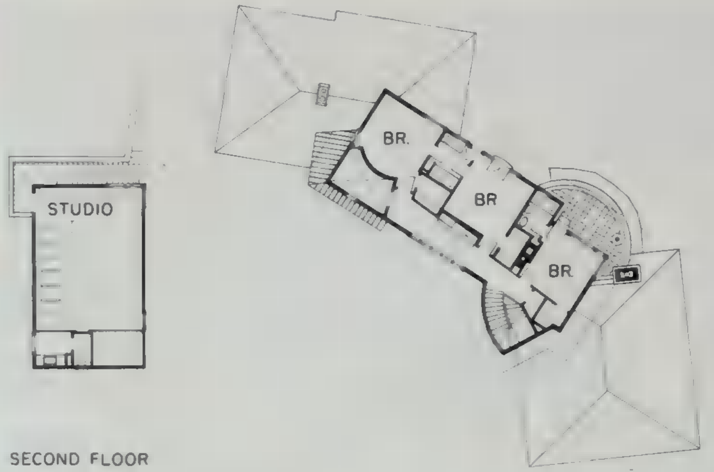




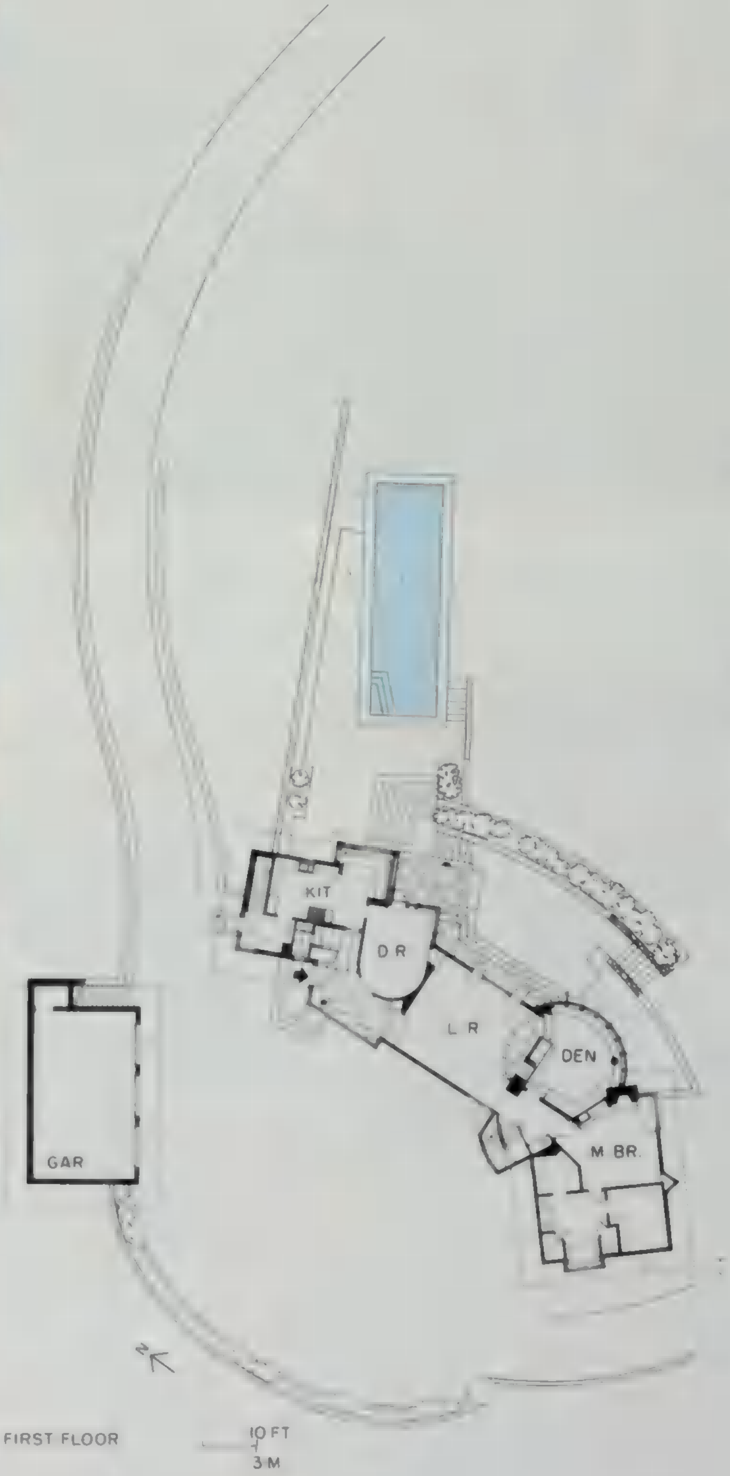
The Westchester house is intended to be seen from an angle (opposite top), though the frontal view best explains its relation of parts to whole (preceding pages). Viewed from a separate painting studio, an overscaled window wall signals the entrance (top). Deep overhangs emphasize the horizontal in the master-bedroom wing (opposite bottom). By carefully arranging stepped terraces and stone-faced walls, the architects protected the garden-side pool (above) without fencing it in.







SECOND FLOOR

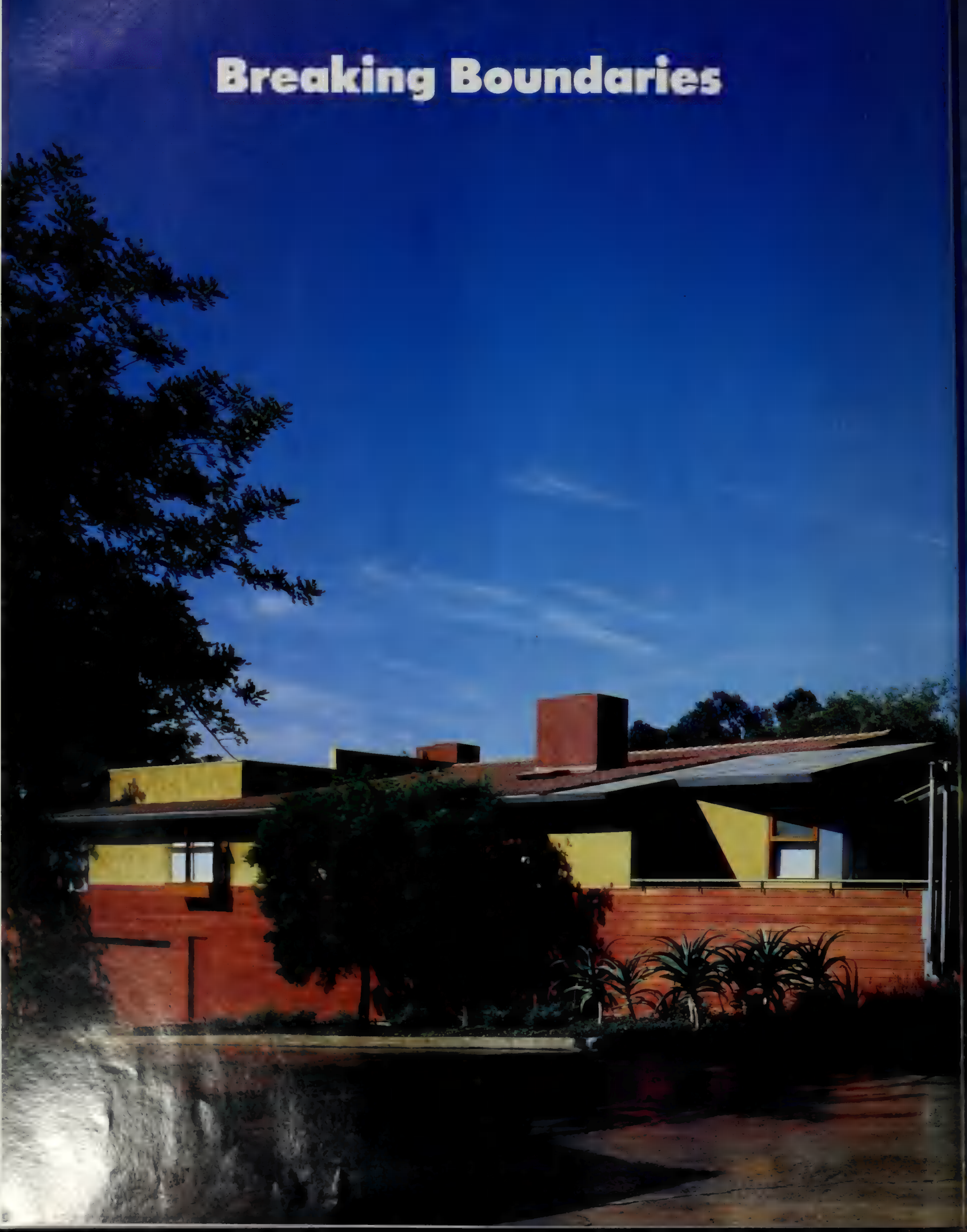


FIRST FLOOR

The open, flowing plan is overlaid with subtly developed axes from entry to master bedroom, from dining to den. Paired columns supporting a roof over a terrace draw the eye through a dining nook to the landscape (opposite top left). A copper fascia and Arts and Crafts tiles transform a Wrightian device, the double-facing fireplace (opposite bottom). Details such as columns, molding profiles, and light fixtures recur, subtly rescaled in the den (opposite top right), the entry (top left), and the upstairs corridor (left). Compare, for example, the oak column and a leg of the custom Windsor chair.

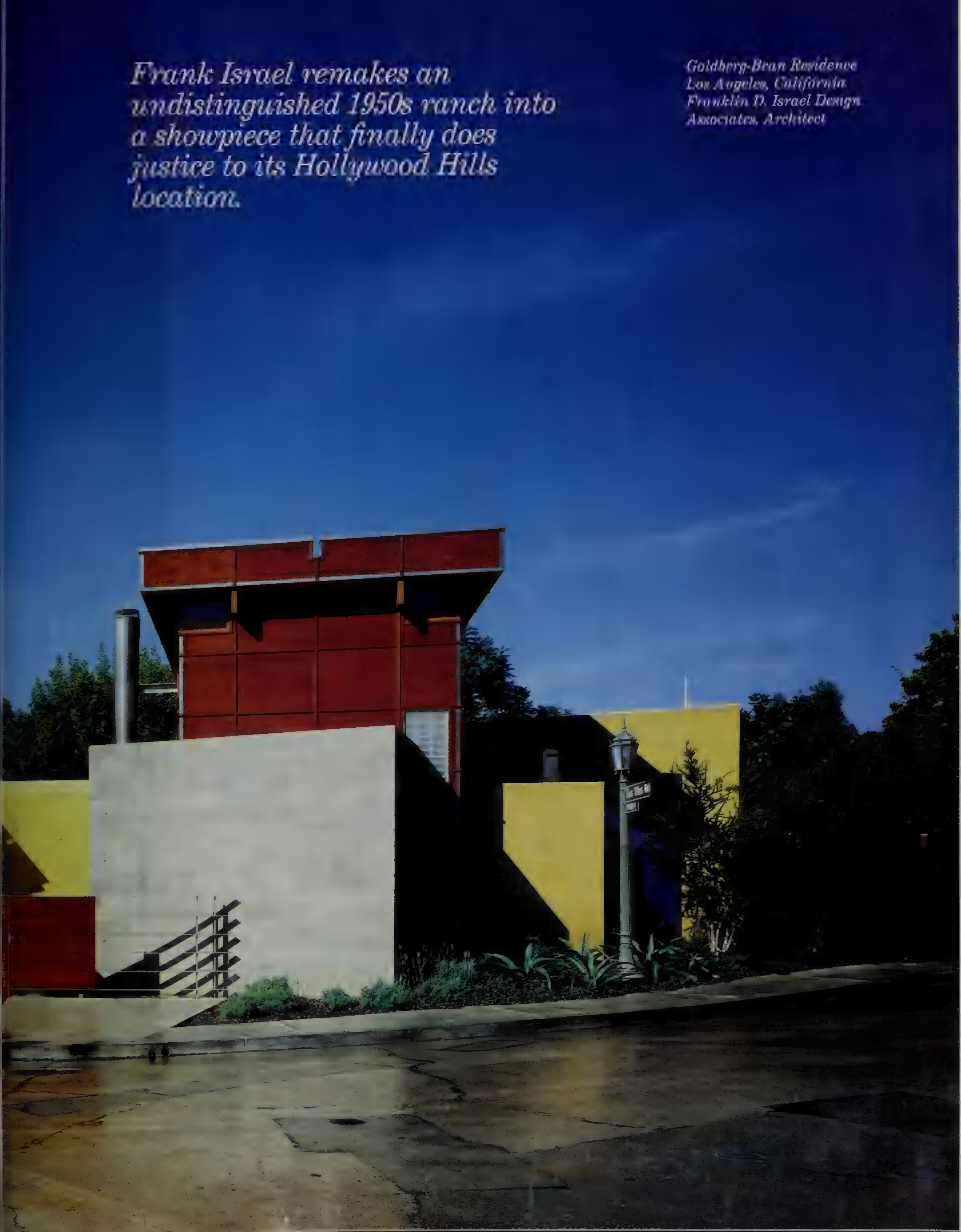
Credits
Westchester Residence
Westchester County, New York
Architect: *Bentley LaRosa Salasky, Architects and Decorators—Ronald Bentley, Salvatore LaRosa, Franklin Salasky, partners-in-charge; Peter Dick, Denise De Coster, Benjamin Benson, Adam Rolston, Jylle Menoff, J. Robert Yogel, Lana Hum, Joseph Morrison, Jean Krueger, project team*
Engineers: *Robert Silman Associates (structural); Regis Engineering (mechanical)*
Landscape Architect:
A. Billie Cohen
Contractors: *Franco Brothers (general); John Skovron (landscape)*

Breaking Boundaries



Frank Israel remakes an undistinguished 1950s ranch into a showpiece that finally does justice to its Hollywood Hills location.

Goldberg-Bean Residence
Los Angeles, California
Franklin D. Israel Design
Associates, Architect



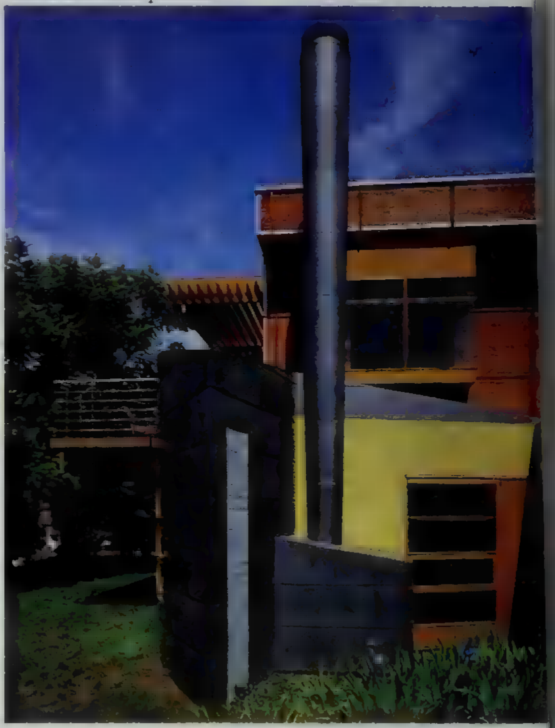
The house that Frank Israel renovated for Howard Goldberg and Jim Bean in the Hollywood hills is an attention-getter, even by Los Angeles standards. This will please those familiar with the original—a 2,400-square-foot 1950s bungalow on a 1/2-acre lot in the Outpost section of the "hills"—which lacked the sort of distinction suggested by the site. But like his clients, Goldberg, a talent agent, and Bean, a real-estate investor, Israel recognized potential. By adding a foyer/gallery and a master bedroom tower, totaling 1,550 square feet, and recladding the existing structure, the architect made the undistinguished ranch into a star.

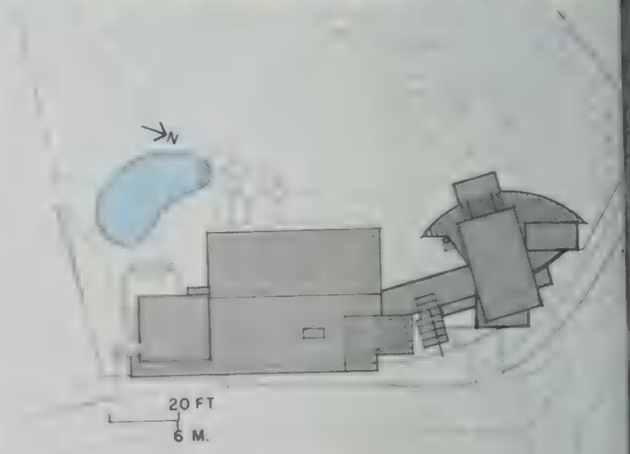
Development of Outpost, a planned community, began in the 1920s and design regulations governing use of building materials virtually mandated a neighborhood style of Spanish revival. In recent years, the regulations, which architects considered stifling, have been mostly repealed, yielding a new but uneven crop of houses. In remaking the Goldberg-Bean house, Israel chose not to erase local history but rather to embellish it. An assiduous analyst of architecture with a special interest in the California building tradition, Israel is quick to point out various references in his work. Shiplap cedar siding on the new front gate, for example, is meant to recall the house's previous lapped siding. The new mustard-colored stucco finish and reddish cedar cladding was inspired by the bright hues of original Outpost buildings. "Looking around the neighborhood you realize that in terms of color, this house is contextual," says Israel.

Israel purposely casts a wide referential net. Discussing the layout of the rooms, he cites the Case Study Houses, the subject of "Blueprints for Modern Living," a major exhibition at the Los Angeles Museum of Contemporary Art held prior to the Goldberg-Bean commission, as a bench mark of the city's cultural identity and his own professional development. The Case Study prototype, where interior and exterior spaces seem to merge into one barrier-free living area, is evident in the new floor plan, which Israel conceived with project architect Steven Shortridge. By opening up the old living room with new sliding glass doors that lead to the backyard and then on to paved terraces that step down to the swimming pool (opposite top), inside and outside merge into one. The architects removed a row of mature shrubs along the narrow site's western edge, where it dramatically drops 50 feet to reveal views of the city below. They also sharpened the contours close to the edge to further intensify the feeling of boundless space.

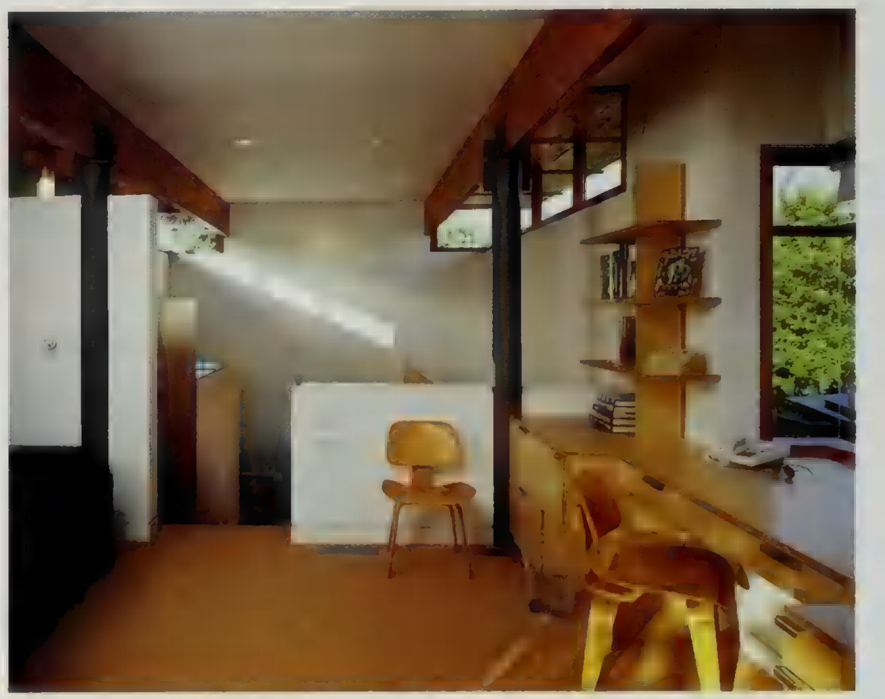
Whereas the west elevation opens to the garden and the city beyond, the east elevation presents a protected public face to the street (previous pages). Here, openings are few and serve more to admit eastern light than to provide views; even the recessed entrance is screened by a glass and steel canopy. The tower is aligned on axis with a perpendicular street, creating a visual hinge in the 150-foot-long street facade. The great length's effect is lessened by the use of contrasting materials, a solution seemingly influenced by Frank Gehry. Israel agrees that he, too, wants "to emphasize the various pieces," but unlike Gehry he eschews material "collisions" in favor of [illegible] similar, in his mind, to the work of Italian master [illegible] are indeed meticulous: redwood battens accent [illegible] modules. Douglas fir delineates window [illegible] tile on the roof distinguishes "old" house [illegible] once mandated by Outpost rules. Tying [illegible] 90-foot-long blue stucco wall that begins [illegible] (following pages), and then curves through [illegible] boldly at the house's north corner—a [illegible] worthy of Hollywood. *Karen D. Stein*

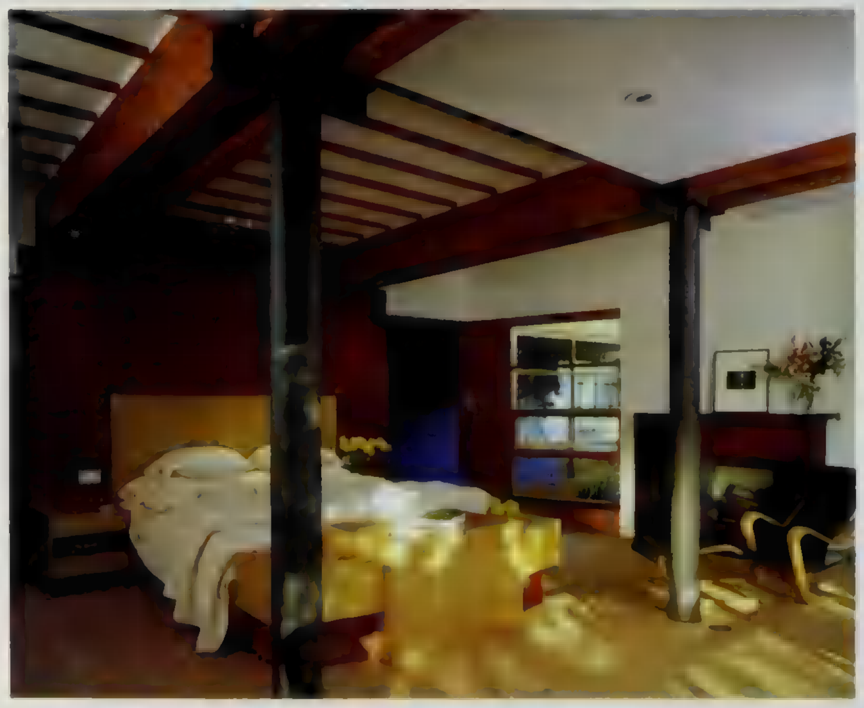
©*Tom Bonner photos*

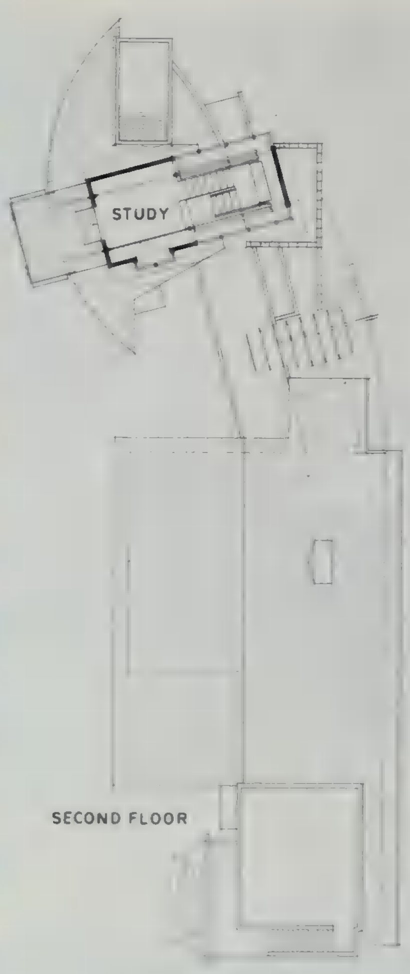


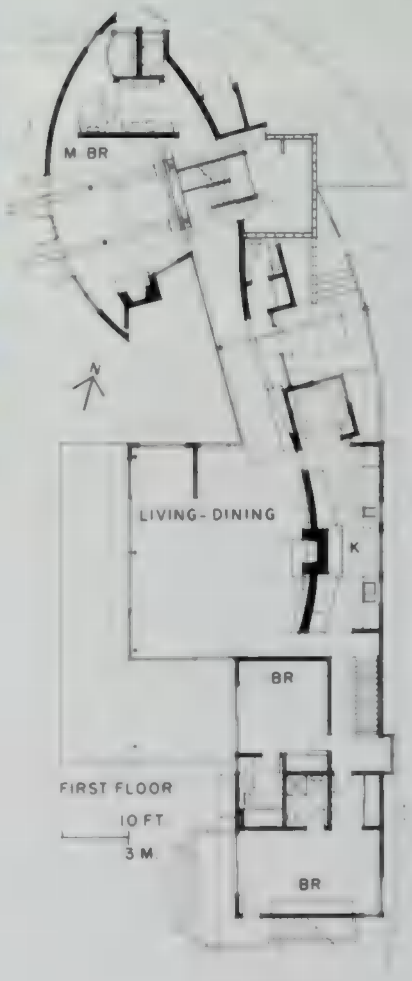


Since local zoning regulations did not require a setback from the street, Israel's 1,550-square-foot addition to an existing 2,400-square-foot 1950s ranch closely follows the curving frontage (site plan above). The entrance is, however, recessed in a forecourt and screened from public view and the sun by a steel and sandblasted-glass canopy (previous pages). A glass gallery, the link between the existing bungalow and the new tower master-bedroom suite (opposite), separates the foyer from the backyard. The architect used different materials to express the various forms: cedar plywood with redwood battens on the tower, bonderized sheet metal on the curved master bedroom wall and chimney, and a light-sand-finished mustard-colored stucco on the forms between.









A 90-foot-long curved blue-
pigmented stucco wall with
smooth, steel-troweled finish
ties the existing house to Isr
el's addition, emerging at th
north corner. The blue wall
separates the living room fr
an expanded kitchen (opposi
top) and creates a light-filled
gallery that links public roo
with the more private maste
bedroom suite (opposite bott
and following pages). The ma
ter bedroom is dominated by
built-in "two-poster" bed wit
two steel columns supportin
Douglas fir gluelam beams
(bottom left). Exposed floor
joists of the study above (top
left) form the "canopy."
The study's balcony shades th
master bedroom, while deep
eaves shade the living room
and adjacent porch.

Credits
Goldberg-Bean House
Los Angeles, California
Owners: *Howard Goldberg an*
Jim Bean
Architect: *Franklin D. Israel*
Design Associates—Franklin
D. Israel, principal-in-charge;
Steven S. Shortridge, project
architect; James Simeo, Dann
Kaplan, Jeffrey Chusid, Leslie
Shapiro, and Michael Poris,
project team
Engineers: *M. B. & A.*
(mechanical); Davis Design
Group (structural)
Consultants: *Jay Griffith*
(landscape); F. I. R. E. Ltd.
(lighting); Future Home
(audio/visual)
General Contractor:
A. R. T.—Lawrence Garcia

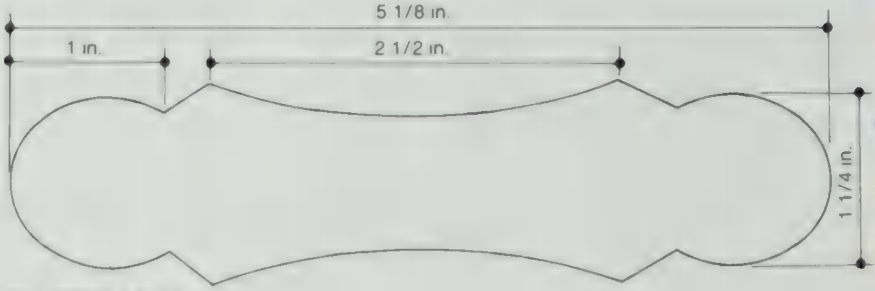
TECHNOLOGY FOCUS:

Stairway Details

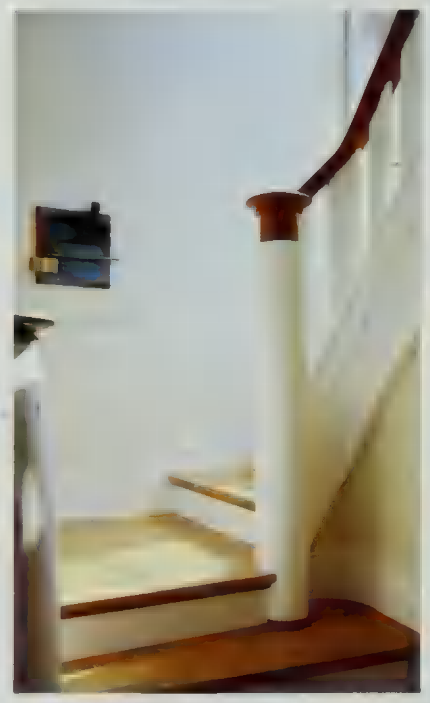
As editors, we spend a considerable time getting to know each project we write about. We become privy to the intense effort that goes into making what may appear on our pages as simple and obvious. A window surround, a roof edge, a cabinetry profile may not assert itself in the design, yet can often be, as a friend says, a poem. Thus, we inaugurate this occasional series in which we show only details. Stairs make a worth subject, especially within RECORD HOUSES, *since they lend themselves to endless interpretation. This group has been chosen to represent a range*

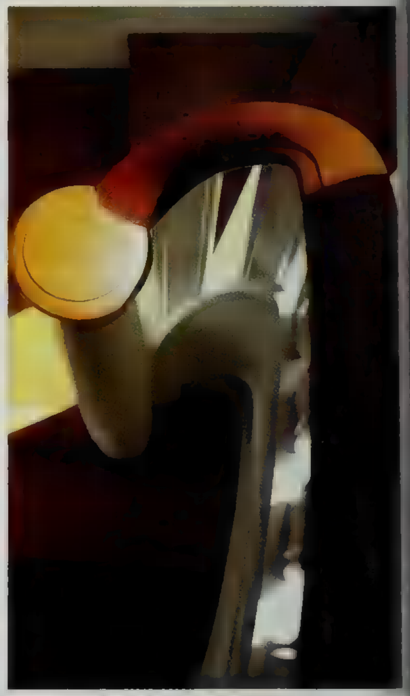
Westchester House

Westchester County, New York
Bentley LaRosa Salasky,
Architects and Decorators



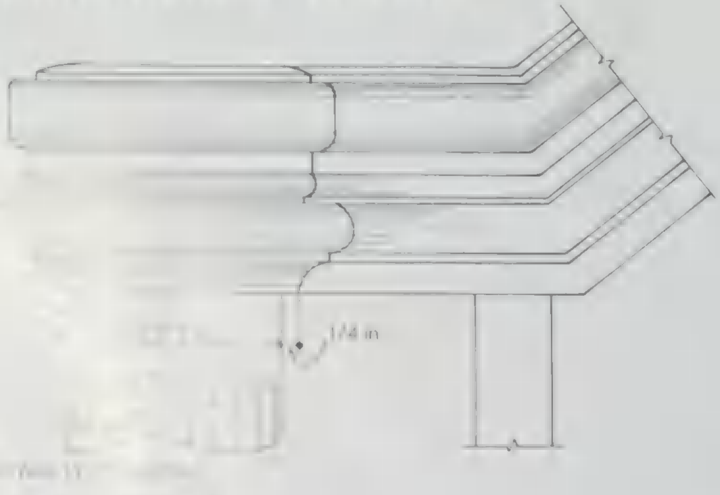
BALUSTER BOARD

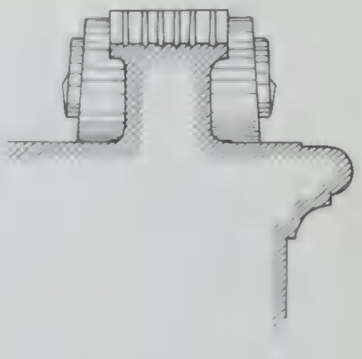




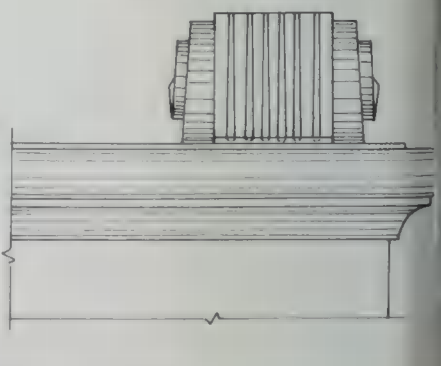
Addition to a House

Westchester County, New York
Bentley LaRosa Salasky,
Architects and Decorators



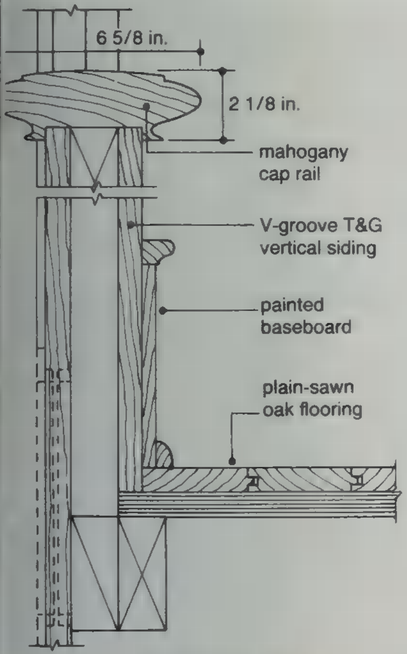


SECTION THROUGH HANDRAIL



END OF HANDRAIL

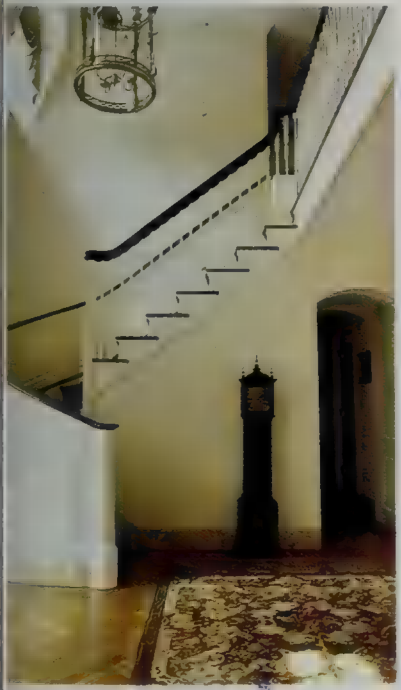
f budgets as well as styles. Note that assembling etails in one story by type is an old idea we're ringing back. In March 1938, when RECORD corporated AMERICAN ARCHITECT AND RCHITECTURE, it began running that ublication's portfolios of details (the first was in leaders). It's still a fresh idea 55 years later. S. R.

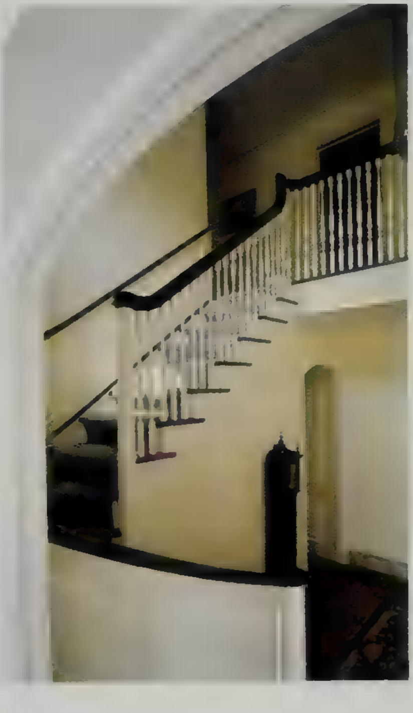


LOW WALL AT STAIR LANDING

Tight corner

Stair details for this house (shown on pages 94-99) restate themes developed throughout the design. The round newel posts are members of a "family" of columns, which occur at various locations. The architects adjusted the thickness and degree of entasis to suit each column's height. Likewise, the baluster of the open rail (plan detail opposite left) is a variation on profiles devised for moldings and trim. Unusually high, the stair stringer's dimension was designed to achieve a pleasing balustrade proportion. Prior to fabrication, woodworkers laid out the stair in their shop to verify that the curved shapes would fit together. A solid balustrade (attached to the lower newel post in far left photo but not visible) is clad in painted vertical beaded-board (detail, near left) as an extension of an adjacent wainscoted surface. ■



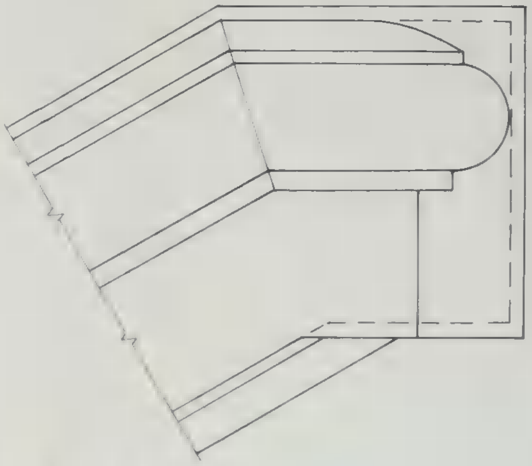


Classical return

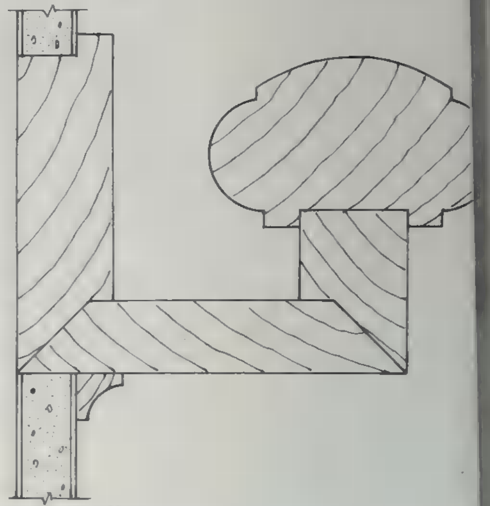
An existing stair had to be redesigned for an addition and remodeling that included creating a double-height entry hall within an existing envelope. The architects stayed with the classical French style of the house in designing the addition. Though treads and risers were retained, an open balustrade was designed incorporating three different thinly proportioned one-and-one-half-inch diameter balusters. Two are weighted more heavily to the bottom; one to the middle. The architects had seen such baluster combinations elsewhere. "We liked the interplay," comments partner Ron Bentley. From the newel post (detail opposite far left), a double-molding rail follows the balustrade up the stair, along the length of a balcony (near right photo) to a solid balustrade-cum-bookcase. The upper half of the rail profile ends in a scroll molding (opposite middle and right detail), while the lower half matches the profile of the bookcase's top. Another solid balustrade curves out of the wall; by carrying the paneling from the adjacent surface, it was treated as an extension of the wall into the space (left photo). ■

Alldredge House

Glen Arbor, Michigan; Charles Warren, Architect



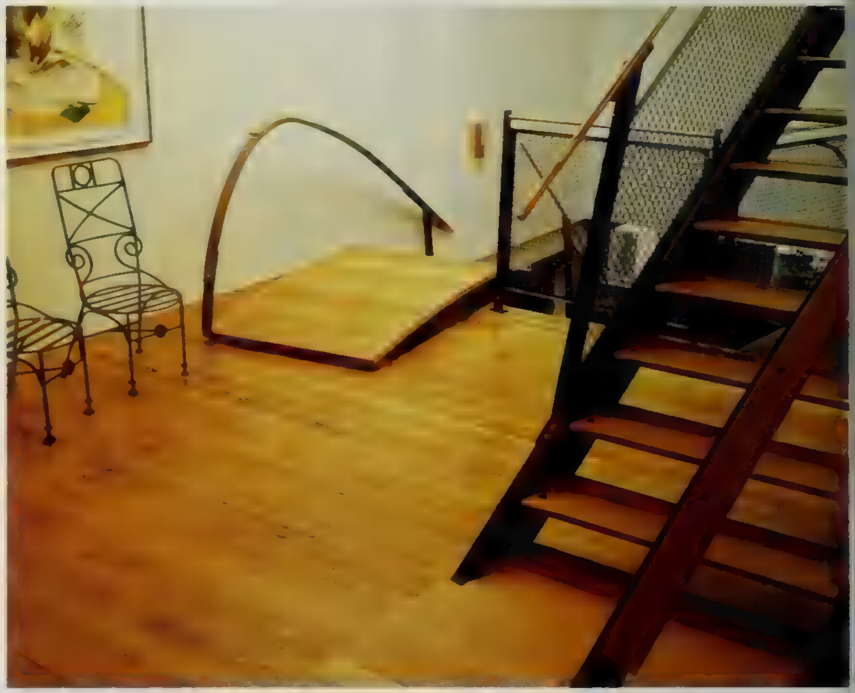
RAIL END AT WALL



RAIL AT WALL

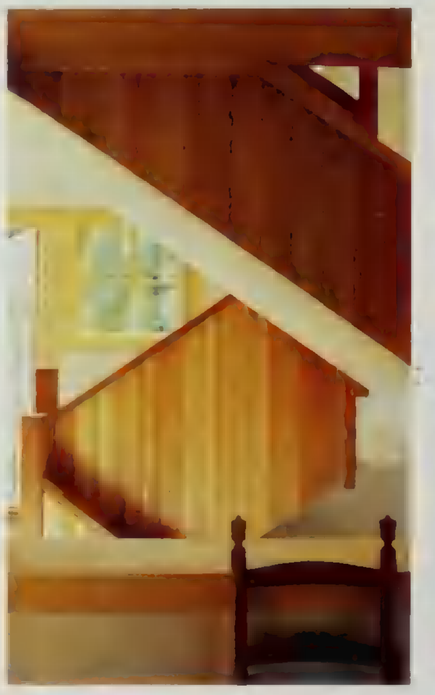
Cooper Bauer Apartment

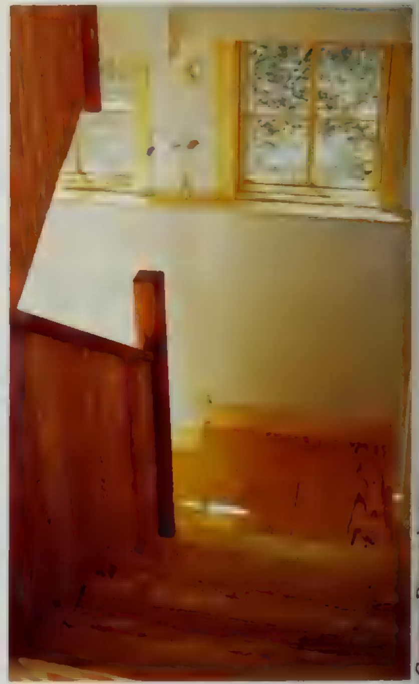
Boston, Massachusetts
Denison Luchini, Architect



Davis Rosenthal House

Lyme, Connecticut
Scot P. Samuelson, Architect

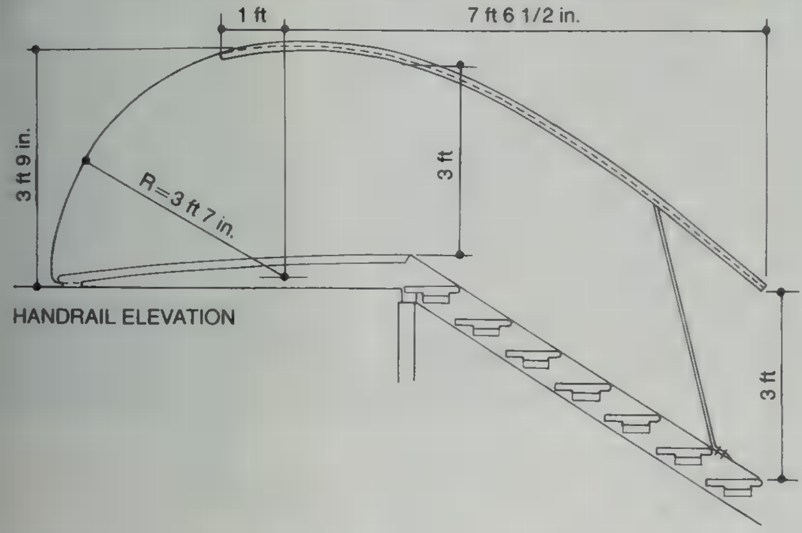




George Ross photos

Prairie Piranesi

With its intricate route, this stair evokes the picturesque vistas and intimate inglenooks of late-19th-century houses. Indirect sun from small dormer windows lights the lowest level. Light spilling down from a viewing tower leads the visitor up. The house's split-level scheme places the main floor a half level above grade for views over dunes to Lake Michigan. The stair is "sort of Piranesian," says architect Charles Warren. "From any one of the house's levels you can see the other ones." The level changes also separate the master bedroom suite from rooms for guests (near left). The bolted connections and simple joinery were inspired by forms found in rural Michigan. Warren has detailed the stair rail so that dropped posts divide panels of round and square balusters (left). The handrail profile (opposite left) is carried on wood brackets where the stair passes between walls (opposite right). ■



HANDRAIL ELEVATION

Compound curves

Stairs connecting three levels are the star of an apartment renovation within a loftlike old mill building. "Our attitude," said partner Dirk Denison, "was to get back to the wonderful texture and surfaces of the original buildng." The lowest stair is even penetrated by an existing building column. A mix of wood, sealed weathering steel, and brass, the stair rails have multiple trajectories. "We wanted the things we added to read as interventions," explains Denison. Adjacent (but separated from) the wall, a partly wood-capped curved metal rail springs from the base of the lower stair. After a gap, it's completed by another rail using a different radius (drawing left and photo opposite). On the open side of the stair, a steel balustrade, capped by a brass rail and infilled with metal mesh, flows parallel to stair treads. The architects added curved ramps at the top of the bottom flight and the bottom of the top flight. Metal rails are welded, and tongue-and-groove wood treads are bolted to steel stringers. The "self-consciousness" of the details is intended, says Denison, "to make people acutely sensitized to the environment and the way that they interact with it." ■

Shakeresque stair tower

Site restrictions mandated a narrow footprint for this small house (less than 1,300 square feet) for a couple with children. Architect Scot Samuelson pulled stairs out of the structure's main body and placed them in a tower. "With a house this small, the staircase becomes big in proportion to the rest of the house," he explains. "By getting the stair out of the center of activity, I felt I could get a better use of space." Responding to both a modest budget and a minimal fee, Samuelson produced an intriguing result with minimum means: carefully placed windows (taking advantage of water views), natural-finished yellow pine stair treads, and beaded-board tongue-and-groove cedar cladding. Cedar cap rails and newel posts have a Shaker-style simplicity. ■

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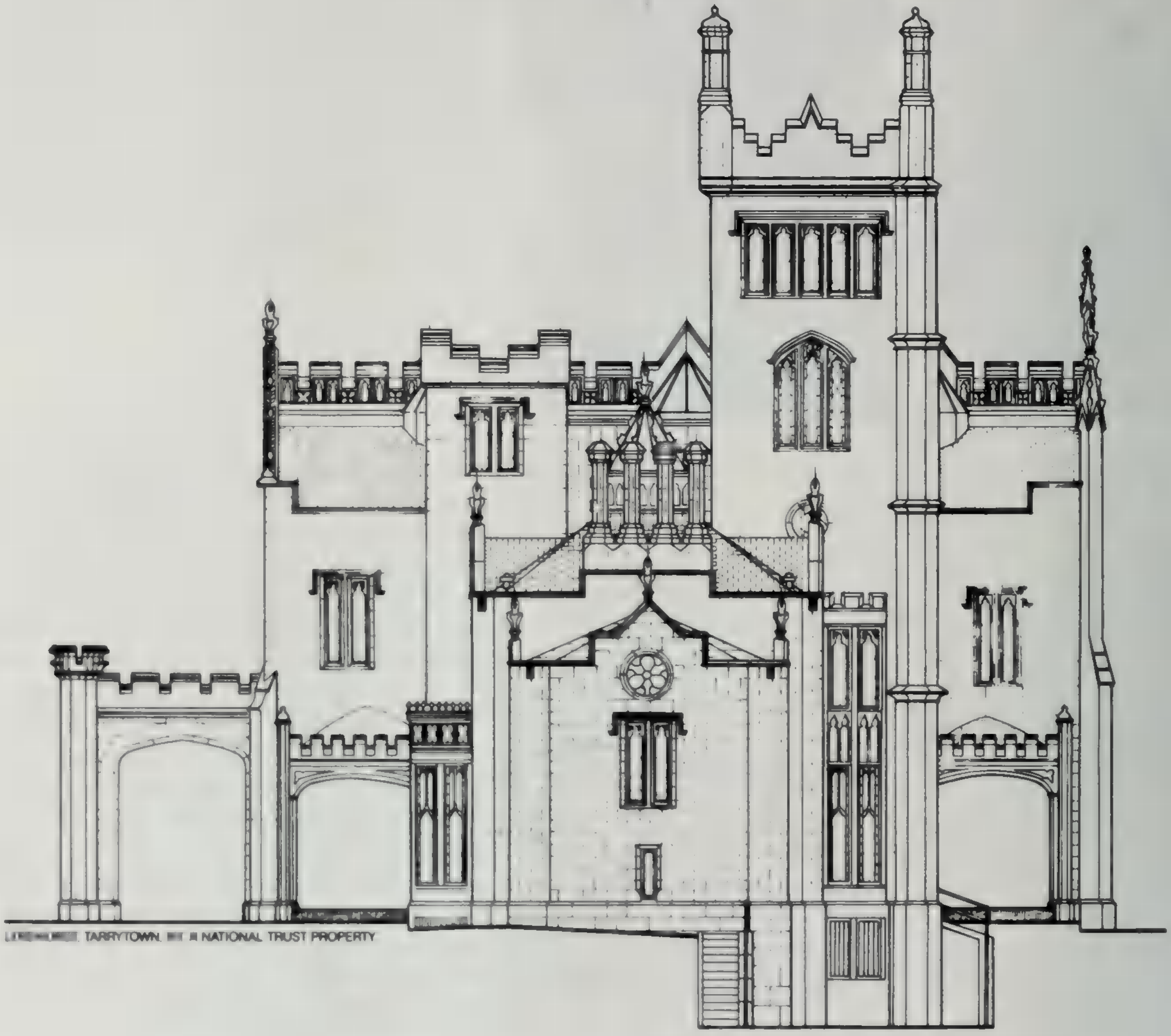

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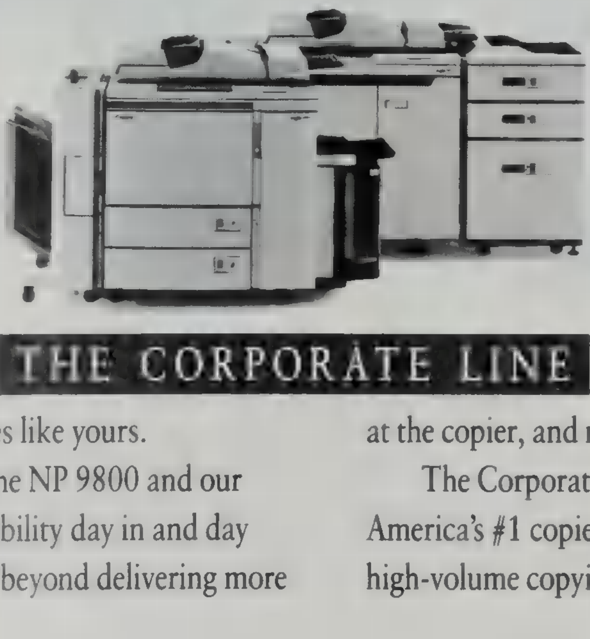

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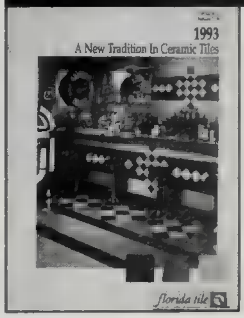
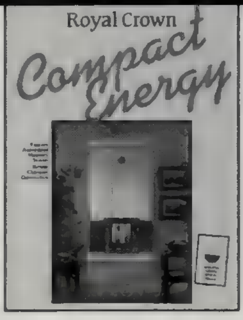
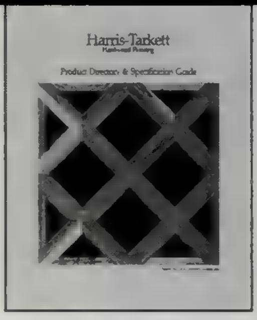


400. Tile portfolio
A colorful 44-page catalog illustrates all of this maker's ceramic products, including moldings and decorative inserts in floral, geometric, and Classical motifs, mosaic listellos for walls and floors, Granite and Tough-One commercial floor tile, and new 16-in. flooring in a marble pattern. Florida Tile Industries, Inc., Lakeland, Fla.



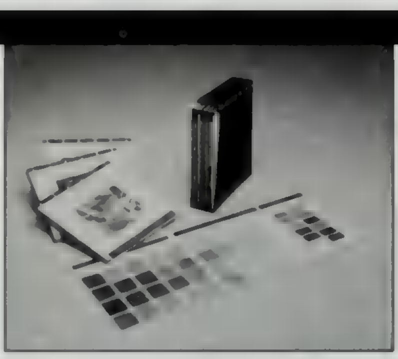
401. Masonry stoves
The Royal Crown stove, or "compact energy unit," is a factory-built high-mass heat-storage system faced in rustic materials like stone, or traditional ceramic tile. Claiming a cumbustion efficiency of 90-95 percent, the heater is said to be less costly than site-built stoves. European Fireplaces, Inc., Rockford, Ill.



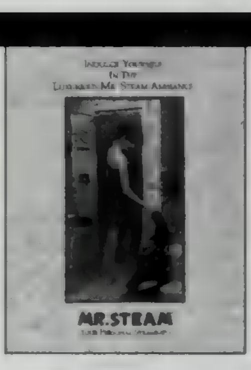
402. Hardwood flooring
Striking parquet and plank floors are shown in prefinished and unfinished red and white oak, walnut, ash, and maple wood. Specification guide describes the Air-Thrust shock-absorbing installation system for sports-floor applications, and includes technical and maintenance data. Harris-Tarkett, Inc., Johnson City, Tenn.

403. Shower enclosures
Custom frameless surrounds of clear glass can be configured in miter-corner, curved, bi-fold, and sliding-door designs. Hinges, pulls, and fittings are shown in polished chrome and brass; glass options include etched and beveled designs and colored tempered-glass panels. Reflections USA, Glen Cove, N. Y.

404. Factory-built fireplaces
The Majestic catalog features gas and wood-burning fireplaces with an unencumbered appearance produced by a baffleless firebox and hearth. Units come up to 48-in. wide, in wall, bay, three-side, and island styles. Noncombustible slate, cast-stone, and brick surrounds are illustrated. Majestic Fireplaces, Huntington, Ind.



405. Vinyl-floor kit
A new color and style selector kit offers 2- by 2-in. samples of VCT and luxury vinyl arranged by color, mounted in easy-to-store albums. Lists physical performance and test data; charts match tiles with the most appropriate wood and marble border elements and base. Azrock Industries, Inc., San Antonio, Tex.



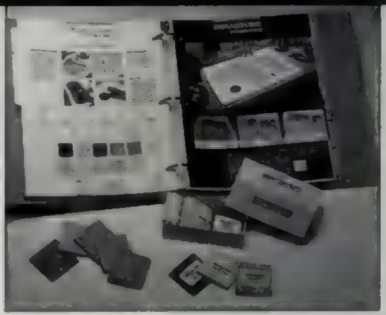
406. Steambath systems
A color brochure discusses five easy steps to select a Mr. Steam home steambath, factoring in room size, exposure, and type of fixtures. Illustrates control and temperature panels, and suggests placement of the compact steam generator. Towel-warming bars are also available. Sussman-Automatic Corp., Long Island City, N. Y.

407. Bath lighting
A 26-page catalog illustrates decorative and functional lighting for the special needs of the bath environment. Fixtures for task, over-mirror, and ambient use are designed to make best use of incandescent, halogen, compact-fluorescent and linear-fluorescent sources. Lightolier, Inc., Secaucus, N. J.

408. Cedar roofing
[illegible] cedar facts [illegible] the insulation [illegible] res[illegible] industry [illegible] offered by [illegible] products. [illegible] Bureau, Bellevue, Wash.

409. Windows in design
Visions of Light, a colorful portfolio, illustrates the design impact windows have on a house's appearance and on the feel of its interior spaces. Distinctive glazing and muntin options are shown in both contemporary and historically-correct homes. Pella Corp., Pella, Iowa.*

410. Siding and trim
A 32-page technical guide covers all Alcoa residential building products, including Lake Forest Kynar-finished vinyl clapboard, Mastic vinyl, aluminum, and steel siding, architectural details such as window mantels, vents, shutters, and rain-removal systems. Alcoa Building Products, Sidney, Ohio.



411. Solid-surface elements
Swanstone's architectural planning kit contains a binder with technical data sheets on the solid-surface material as used in countertops, vanities, tub surrounds, and drop-in sinks, as well as a sample box with all 15 solid and granite-look colors. The Swan Corp., St. Louis.

Continued on page 121

** Product data on CAD disk*

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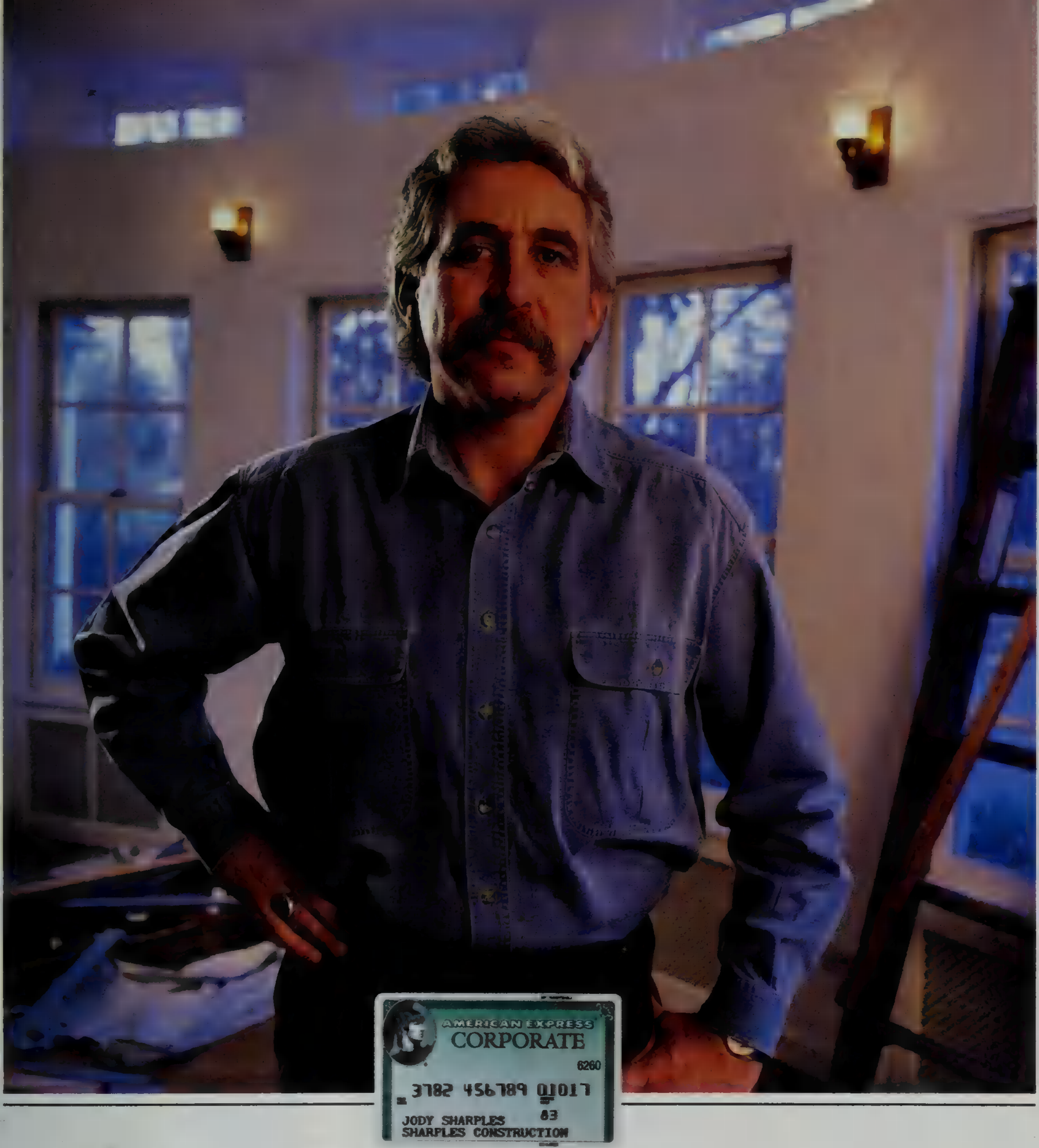

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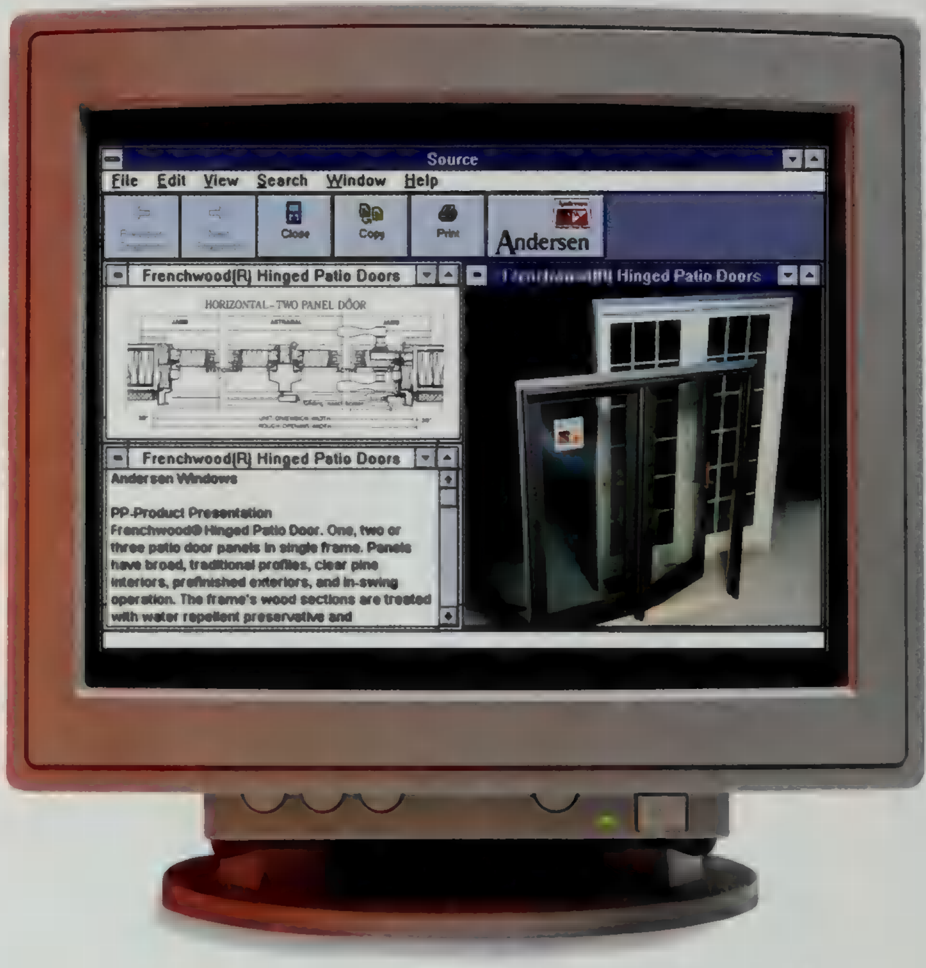

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02. Deeper storage
odular mirrored cabinets now come 6- and -in. deep, large enough to store supplies reviously consigned to the linen closet and o clear the sink of hairdryers and other ulky items that won't fit in a standard, -in.-deep cabinet. The extra-depth cabinets an be fully or partially recessed, or surface-nounted using a mirrored side kit. Robern, nc., Bensalem, Pa.

303. Double/double function faucet
A new kitchen faucet has a pull-out sprayhead that can be switched from aerated stream to a spray pattern at the flick of a finger; the faucet handle itself breaks down to release a detachable, palmsize head that gives maximum spray control and maneuverability. Integral adjustments permit dialing-down water pressure and limiting temperature range. Franke, Inc., North Wales, Pa.

304. Mobile constructivist
Maynard Lyndon, a founder of Boston's Placewares stores and an architect by training and familial bent, designed Wendel build-it-yourself shelving and carts to be a lot more attractive than planks and cinder blocks. Sturdy composite-wood shelves, available in black, mahogany, or cognac finishes, sit on chrome or black wire wickets that fit into holes in the shelves. Two- and three-shelf units shown, on casters, can hold a television set and VCR or work as a serving cart. CSL/Creative Space Limited, Scarborough, Ont.

Continued on page 124

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nth's feature articles, RECORD has asked the
hitects to identify the products specified.

ges 64-71
euer Residence
lliam P. Bruder, Architect
tal panels, gate, stainless-steel fireplace, and
forated-metal sunshade: Lewis Machine and
lding. Glass (windows and entrance): PPG In-
stries, Glass Group (Solex). Hardware and push
s: The Ironmonger, Inc. Aluminum patio
irs: Knoll International (Pesci). Bath lighting
l low-voltage recessed lights: Halo. Sink: Amer-
n Standard. Tile: Endicott. Switches: Leviton.
rome chairs: Knoll International. Custom
ple-veneer plywood doors, windows, and maple-
tten ceiling: Laurent Construction.
frigerator: Amana Refrigeration.

ges 72-75
tist's Studio and Residence
german McCurry, Architect
ucco: La Habra Stucco. Aluminum-clad wood
ndows and French doors: Peachtree. Lever-han-
locksets: Schlage. Glass: Twinsul. Corrugated-
minum roofing: Industrial Building Panels.
iling fan: McMaster Carr. Track lighting fix-
res: Halo. Paints: Dunn Edwards. Integral-color
ncrete: Ready Mix, Inc.

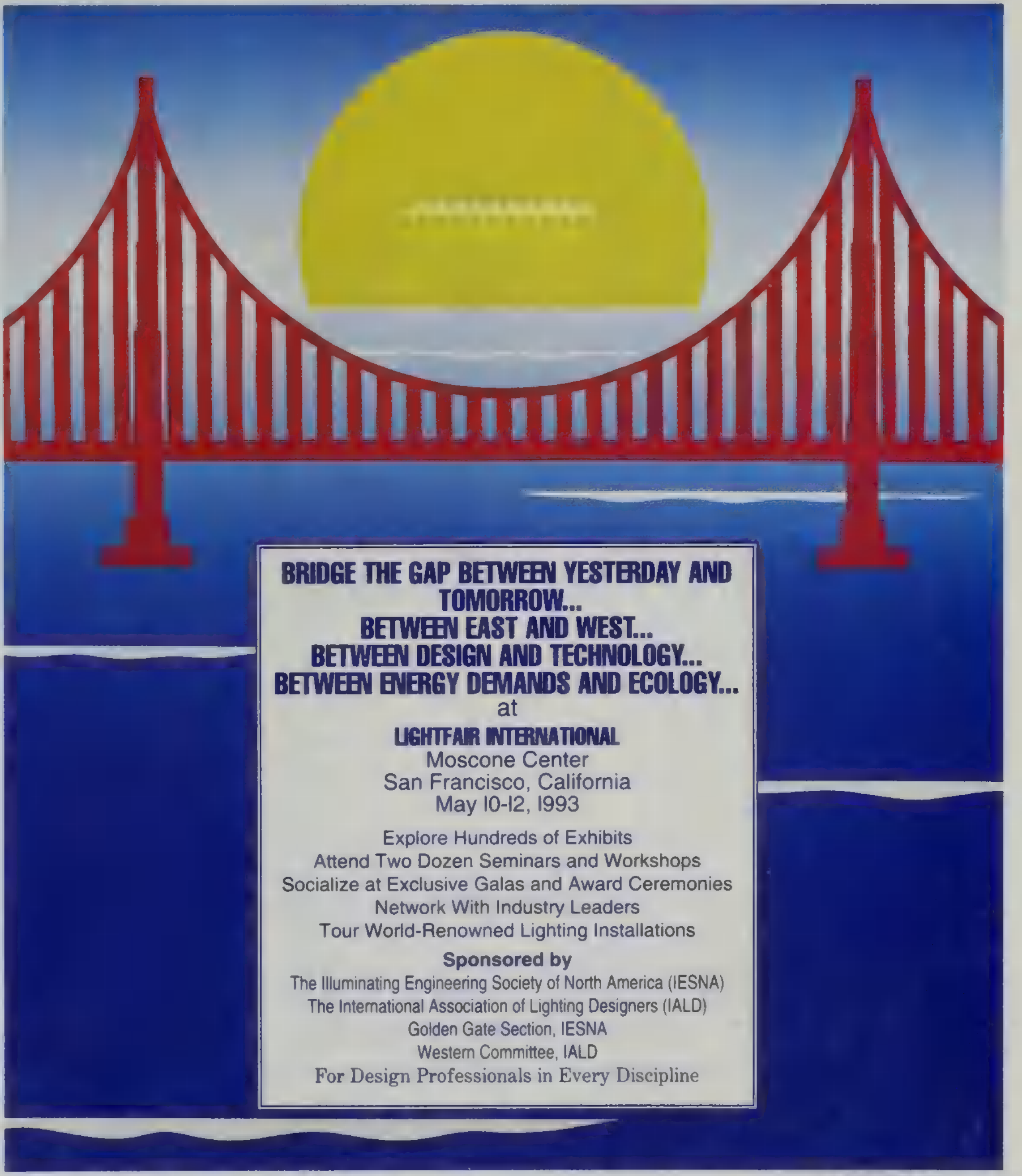
ages 76-83
rman Residence
ariri & Hariri Design, Architects
eel windows and doors: A&S Window Asso-
ates. Stucco: Thoro System Products. Standing-
am roof: Berridge Mfg. (Galvalume). Modified-
tumen roofing: U. S. Intec. Paints: Benjamin
oore & Co. Garage doors: Finishline Ind., Inc.
xterior sconces: Poulsen Lighting, Inc. (Skot
all). Entrance metalwork: Scott Madison.
ocksets: OMNIA Industries, Inc. Fenestra Lime-
one flooring: Innovative Marble. Ceiling
xtures: CSL Lighting. Pivot hinges, cabinet
lls: Stanley. Self-closing hinges: Grass. Stain-
ss-steel countertop: Lab Fabricators Co.
aucets: Speakman. Stove: Viking. Refrigerator:
raulsen.

ages 84-89
lartin Residence
anner Leddy Maytum Stacy Architects
letal cladding: Lead-coated copper. Spotlighting
nd recessed fixtures: Lightolier, Inc.; Halo.
iving-room club chairs and tables: designed by
Villiam Leddy, TLMS. MR16 spots: Arteluce. Ra-
iator: Runtal North America, Inc. Obscure glass
t interior: Page Glass, Inc. Lever-handle locksets:
he Ironmonger (D Line). Exterior lighting:
EGA/FS; Lumière. Pulls on kitchen cabinets:
orms+Surfaces. Ceiling lights: Poulsen
ighting, Inc. Skylights: O'Keeffes, Inc. Wood
culptures: Kathleen Edwards.

ages 90-93
tudio/Guest House
eborah Berke and Carey McWhorter, Architects
hingle roofing: Bird, Inc. Exterior opaque stain:
amuel Cabot, Inc. (Barn Red). Awning and dou-
le-hung windows, patio door: Marvin Windows. Paints: Dutch Boy. Entrance, interior and sliding doors, cabinetwork: custom by architects, fabricated by Shadic Builders, Inc. Hardware: Schlage Lock Co.

Pages 94-99
Westchester Residence
Bentley LaRosa Salasky, Architects and Decorators
Shingles: GAF (Timberline). Exterior stucco: Bonsal (Marblesil). Windows: Marvin Windows. Exterior sconces: Poulsen Lighting, Inc. (Orbiter). Switchplates: Lutron. Doors and cabinet hardware: Baldwin Brass. Countertops: Formica Corp. Carpeting: Stark. Paint: Benjamin Moore & Co. White-oak paneling: Breakfast Woodworks. Pendant light in breakfast nook: Scandinavian Design. Other fixtures: custom by Bentley LaRosa Salasky, fabricated by Wainlands. Wood blinds: Levelor, Inc. Stone-flag flooring: Pennsylvania Bluestone. Fireplace tile: EPRO.

Pages 100-107
Goldberg-Bean Residence
Franklin D. Israel Design Associates, Architect
Mosaic and pool tile: American-Olean Tile. Windows: custom by architect. Roofing: U. S. Intec. Locksets: Baldwin. Master-bedroom fireplace: custom plaster and steel-plate hearth and mantel by F. D. Israel Design; prefabricated firebox. Integral-color concrete: Suncrete. ■



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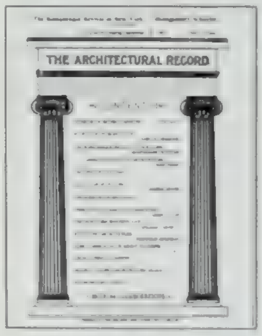

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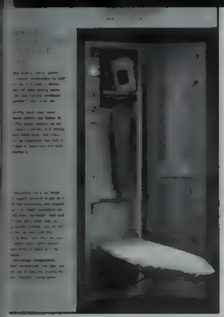


4. Hidden helpers

talog pages demonstrate a range household accessories offered in t-of-sight housings. In addition to e classic fold-up ironing board, ere are wall-mount can openers, asters, and paper dispensers. mensions and finish options are ted. Iron-A-Way, Inc., Morton, Ill.

16. Solid-wood windows

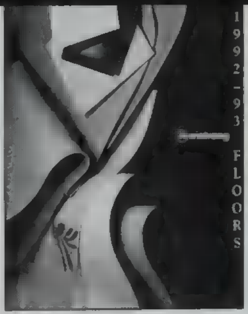
30-page 1993 catalog provides con- truction details, glass options, and omplete size information on a 4,000- tandard-design line of wood indows, bay and box units, sliders, nd entrance doors. Drawings ex- lain features such as extra-thick ash and true-divided-light glazing. rchitectural binder available. Pozzi Vood Windows, Bend, Ore.

413. Residential lighting

A colorful applications guide illustrates attractive, functional lighting techniques room-by-room, focusing on how recessed fixtures can be used to accent art, highlight an architectural feature, provide security, and light tasks. Applications are matched with the appropriate fixtures. Juno Lighting, Inc., Des Plaines, Ill.

415. Hardwood in the home

A 22-page consumer guide illustrates the appeal of natural-wood cabinetry in both kitchen and bath. A picture glossary of framing styles, side-by-side grain patterns, upkeep advice, and layout tips are included. Hardwood Manufacturers Association, Pittsburgh.



417. Flooring options

A spiral-bound portfolio illustrates residential sheet-vinyl and VCT floors in room settings, with close-up photography of all colors available in each pattern range. Maintenance and durability features are used to assign floor products to good, better, or best category. Armstrong World Industries, Lancaster, Pa.

Continued on page 123

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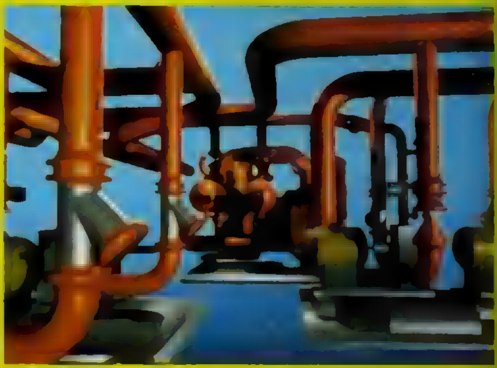
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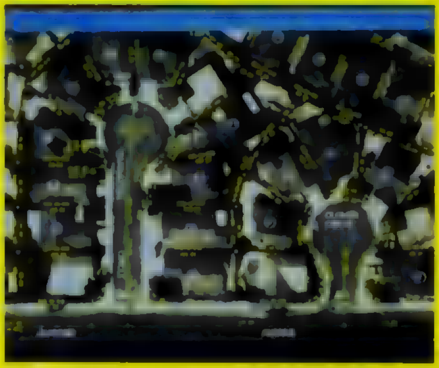
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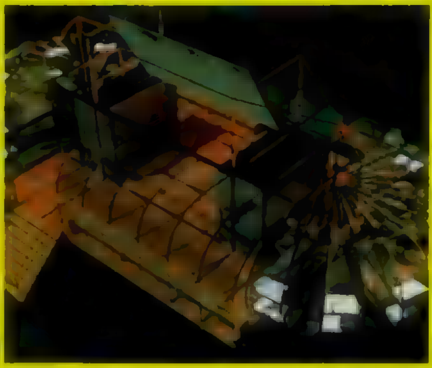
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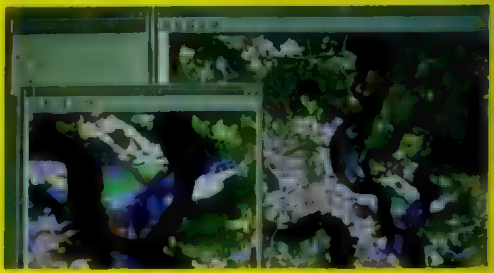

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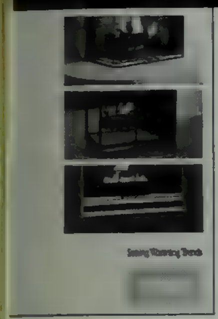
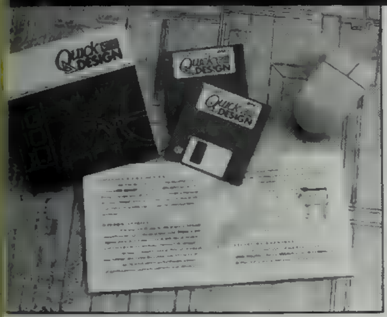


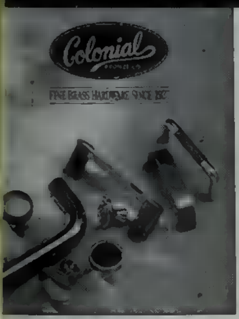
18. Hearth selection
updated catalog illustrates fac- ry-built wood-burning and gas eplaces, some as wide as four feet, room settings that convey the de- zn impact of island, three-side, see- rough, and corner units. New atures include rounded, refractory lge treatments and larger fire- ewing areas. Superior Fireplace ., Fullerton, Calif.*

419. Sink-selection tips
A foldout brochure puts all of this maker's stainless-steel sink styles on one page for comparison, and explains the functional and appearance benefits of heavy-gauge steel as a kitchen-design material. Elkay Manufacturing Co., Oak Brook, Ill.

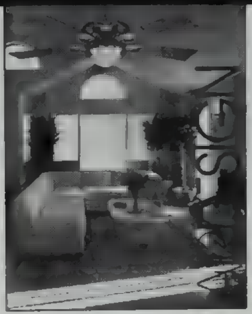


20. Window-design software
ffered free to qualified architects, Iilgard's Quick Design mouse/ ienu utility for AutoCAD generates etails and elevations on wood, alu- iinum, and vinyl window and door roducts to 1/16th of an inch within wide size range. Drawings and text an be exported to project-specific ocuments. Milgard Manufacturing, nc., Tacoma, Wash.*

421. Luxury bath fittings
A 24-page brochure presents decorative faucets, whirlpool tubs, brass basins, Euro-style Alape vanities, hardwood bath furniture from Henredon and Drexel Heritage, and accessories for the traditional or contemporary-style bath. EPIC, Indianapolis.



22. Brass cabinet hardware
An architectural catalog shows nobs and pulls in a variety of deco- ative finish options, including Corian and Fountainhead solid-sur- face materials that coordinate with other interior components. Metals come in both U. S. Standard and BHMA finishes. Colonial Bronze Co., Torrington, Conn.



423. Ceiling fans
Individual catalogs illustrate the blade, control, motor-housing, and light options for both the traditional-style Emerson fan and the contemporary AirDesign line, which includes the three-bladed Tristar fan. Describes the summer- and winter energy-saving and comfort advantages of ceiling fans. Emerson Electric Co., Hazelwood, Mo. ■

*Product data on CAD disk

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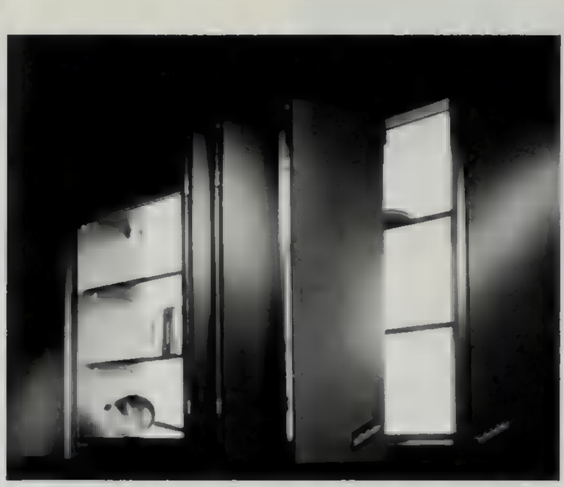
305. Curveable shingle panels

One-course versions of this maker's standard 8-ft-long shingle-siding panels turn an 8-ft radius. To form tighter curves, such as the 5-ft-radius wall pictured, panels are back-kerfed every two inches. Cedar siding comes in 4-, 5-, and 7-in. exposures. Cedar Valley Shingle Systems, Hollister, Calif.



306. Concertina-door hardware

Designed to provide clear access to the interior of wall-mounted cabinets, new Impulse fittings produce a multiple-panel door that both folds and slides. With one pull of the handle, four- or six-panel doors fold aside in a single package, sweeping to either side like a drapery. Mirrors can be added to the doors for bathroom applications; large clear-span openings (up to 70-in. wide and 43-in. high) allow use of pull-out storage units instead of just shelves. Hettich America, L. P., Harrisonville, Mo.

307. Long-span vinyl siding

Described as the first seamless-style vinyl siding, Symmetry comes in two profiles, both in a 40-ft.-long panel length, a span th eliminates the telltale breaks of standard, 12-ft-long siding. Vinyl clapboards are installed with a special slide-on clip fastener that allows sufficient spacing to account fo the expansion and contraction of a 40-ft-lon panel. The smooth surface has a low-gloss finish, available in five colors. Wolverine Technologies, Livonia, Mich.

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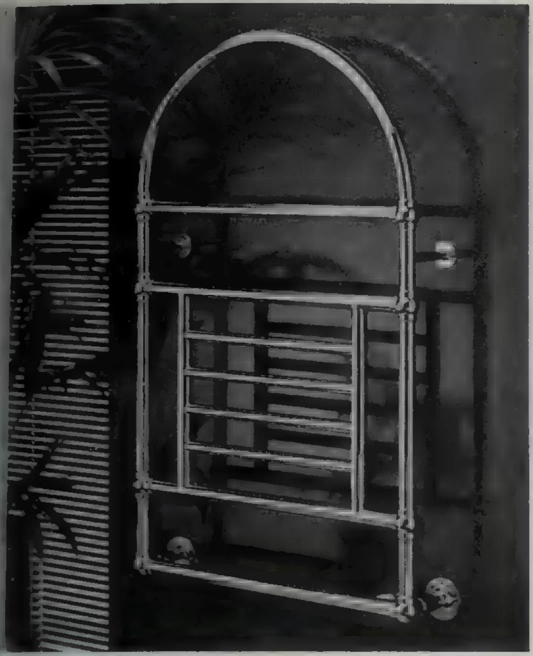

08. Electric towel warmers
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c models for wall- and floor-mounting, with
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its can include arches, mirrors, and shelv-
ig; parts come in chrome, brass, gold plate,
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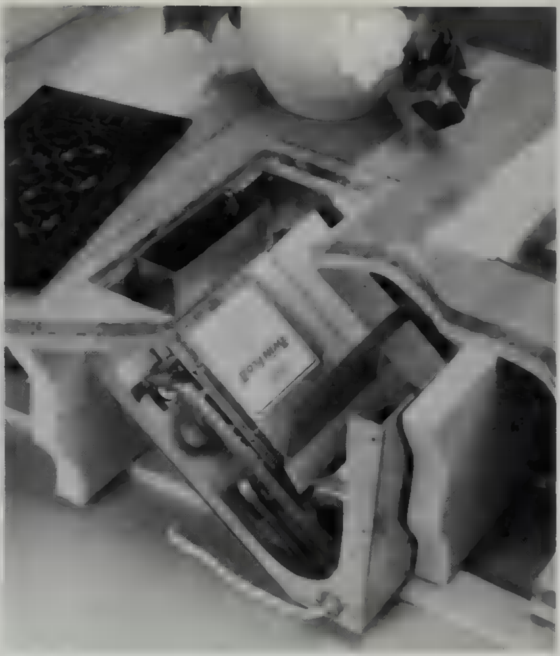
Vesaunard, Inc., Spotsylvania, Va.



309. Below-floor hydronic heater
The Twin-Flo II supplemental heater fits in the 8- by 16-in. space between floor joists, gently circulating warm air where needed. Units can be ordered with a decorative cast-iron or solid-brass grille that fits flush to the floor or carpet. An even smaller kickspace heater with grille fits into cabinets, bookshelves, and stair risers. The Reggio Register Co., Ayer, Mass.

310. Solid-brass mortise lockset
A new entrance-handleset line comes in six different styles (Regal, Estate, and Chateau are pictured), with Schlage keyway cylinders standard for the backset mortise locks. Each lockset is part of a coordinated hardware line, with matching interior trim, passage sets, and accessories. Omnia Industries, Inc., Cedar Grove, N. J.

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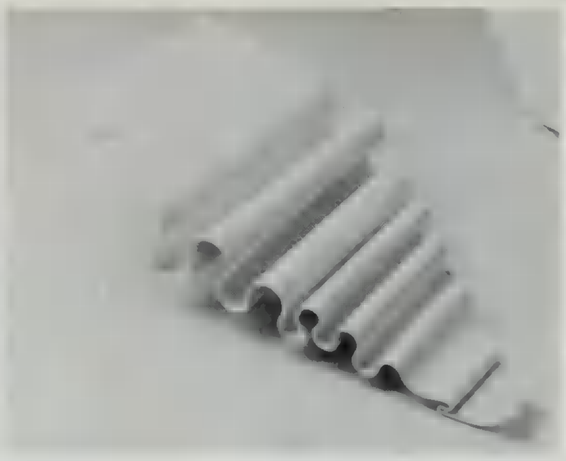
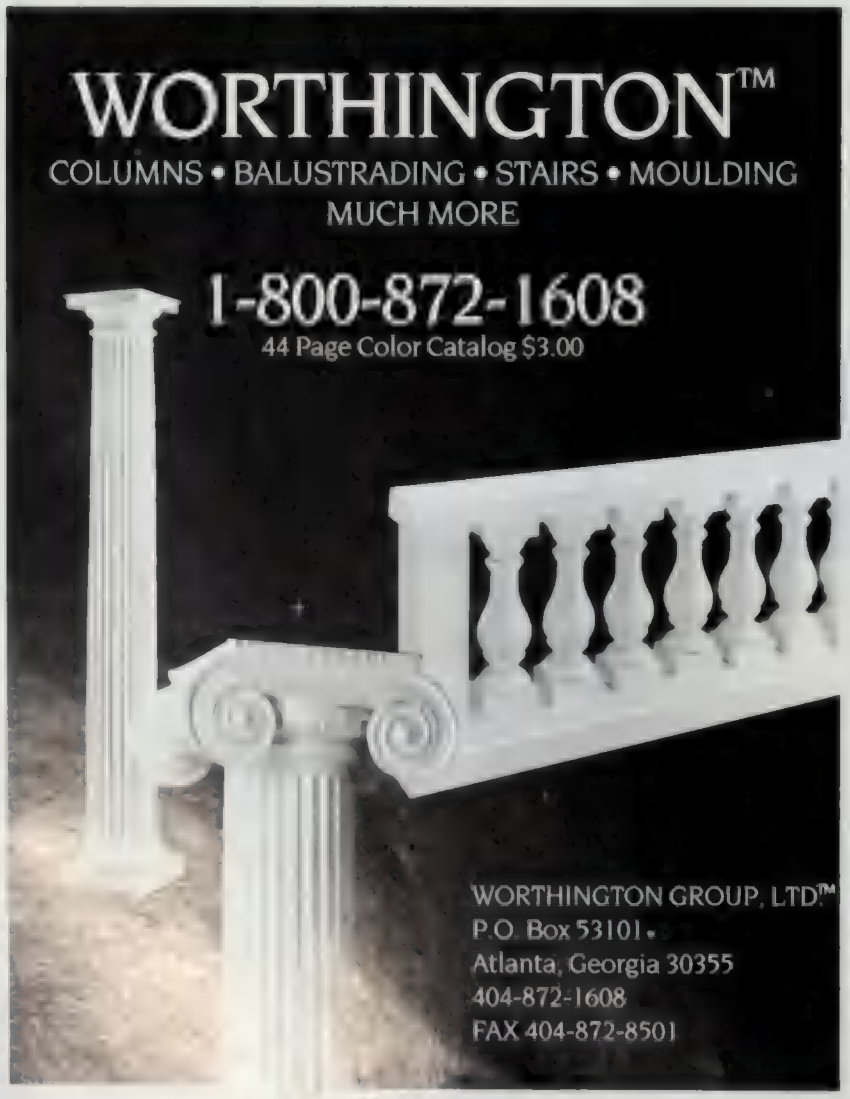
311. Chamfered-corner shingle
New Carriage House fiberglass roofing creates a 19th-century scallop-edge effect on steep slopes. Made with two full-size base shingles, the dimensional shingle comes in seven colorations of gray, brick red, and green that match the manufacturer's other Shangle roofing products. Chamfered shingles are shown, used to create a fish-scale pattern in a slate-shingle field. CertainTeed Corp., Valley Forge, Pa.



312. Surfacing hybrid
A new extruded thermoplastic with many of the performance and appearance qualities of solid-surface materials—at half the cost—Nuvel is described as an upgrade from laminates. Offered as a sheet to be glued onto a substrate like particleboard or MDF, it is impact- and heat-resistant (it originated as a GE product for car bumpers), and can be post- or thermo-formed to create waterfall edges and curves. Offered in five matte colors to match Surell solid surfacing, Nuvel can be seamed with it to create integral sink/countertops for less cost than an all-solid-surface installation. Formica Corp., Cincinnati.

313. Blue English limestone
This dense and hardwearing stone has a characteristic range of colors varying from greenish blue to deep blue/purple, with fossilized shells visible. Used as flooring since the 11th century (Canterbury Cathedral has blue limestone pavers), a newly developed source offers 1 1/2-in.-thick slabs, cut to size. Surface can be left its natural matte, o polished to an aged patina. Paris Ceramics, New York City.

Continued on page 135



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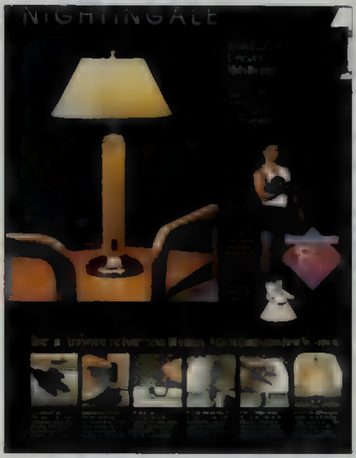
Adjustable Fixture Co.



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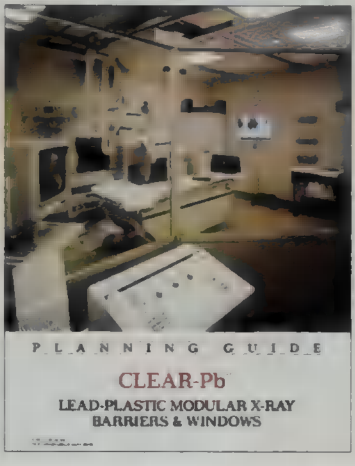

New guide illustrates user designed installations of CLEAR-Pb Lead-Plastic Modular Barriers and Windows in hospitals, radiation therapy centers. CLEAR-Pb is a transparent, lead-impregnated plastic sheet in lead equivalencies from 0.3 to 2.0 mm; over 200 stock sizes up to 6 x 8 ft. (larger on special order). For more information call 516-741-7717 or FAX 516-741-5414.

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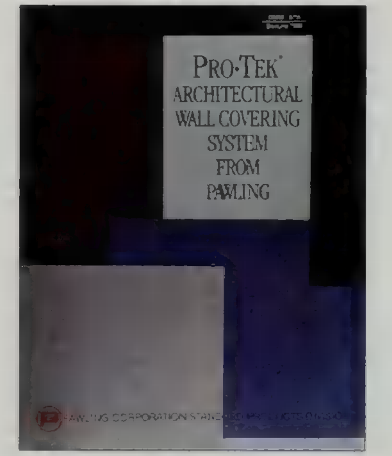

Pawling's Pro-Tek® architectural wall covering products for stringent design color requirements. Standard 4 ft. x 8 ft. vinyl sheets range in thicknesses for varying protection needs can be installed as a permanent wall covering with matched moldings. Prelaminated vinyl wall panels mounted on choice of sturdy wall materials to create temporary/permanent partitions with matching trim accessories. 40 NEW COLORS for contemporary design-coordinated projects, Class I fire rating & are UL & ULC approved.

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Fire-X FRT lumber and ply
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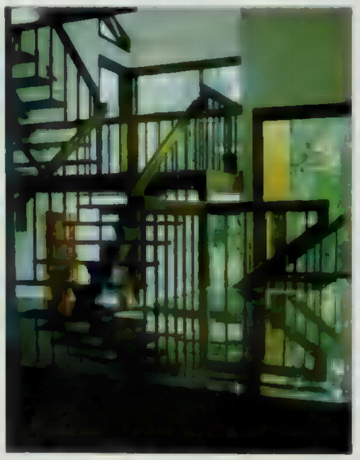

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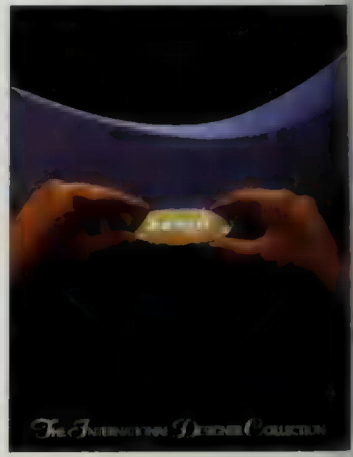
Jacuzzi Whirlpool Bath



Jacuzzi Whirlpool Bath offers a 40-page, color catalog featuring the International Designer Collection of whirlpool baths, faucetry and the J-Dream family of shower systems. Jacuzzi® offers a variety of styles and features. Literature is also available on the Builder Group of whirlpool baths, the faucetry collection and shower bases. Call: (800) 678-6889.

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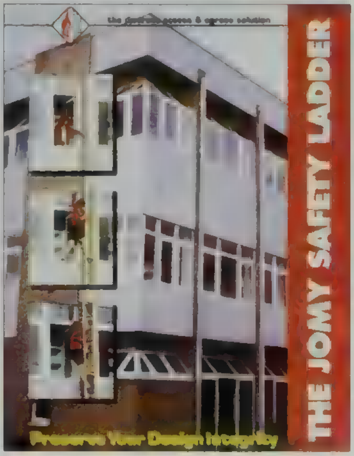
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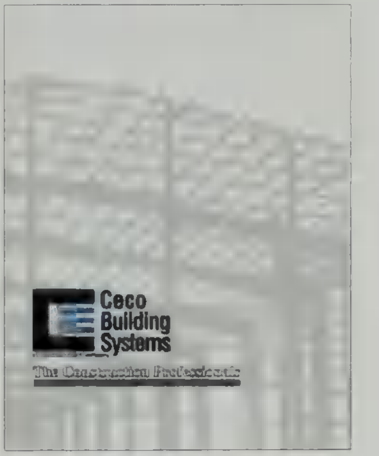

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Tired of imitation shutters made from a mold? Unhappy with shutters held together by staples? Give yourself a surprise: traditional working shutters made of clear, old-growth western red cedar. Constructed with authentic teak-pegged mortise & tenon joints, Vixen Hill manufactures 8 classic panel & louver styles in standard & custom sizes. Cedar shutters feature heavy stiles & cross-rails as well as separate interlocking trim & extra thick louvers for extended product life. For brochure call 1-800-423-2766.

Vixen Hill Manufacturing

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VALID-AIR HIGH PERFORMANCE DIFFUSERS

Valid-Air High Performance T-Bar ceiling diffusers offer a quantum leap in draft-free design performance over conventional diffusers. Multiple high velocity patented dimple jets, induce secondary air to optimize room circulation and dramatically improve indoor air quality. Flush to the ceiling, anti-smudge design is available in a variety of sizes, colors, patterns and materials. Warren Technology, (800) 231-1084, FAX 305-557-6157.

Warren Manufacturing Co.

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stores 1,000 to 12,000 slides. Scan, edit and view entire slide collections. Slides are stored on metal racks housed on either side of an illuminated viewing screen. Base [illegible] store up to 65,000 [illegible] drawers for [illegible] Elden Enterprises, Box [illegible], Charleston WV [illegible] catalog call (800) [illegible]

Elden Enterprises

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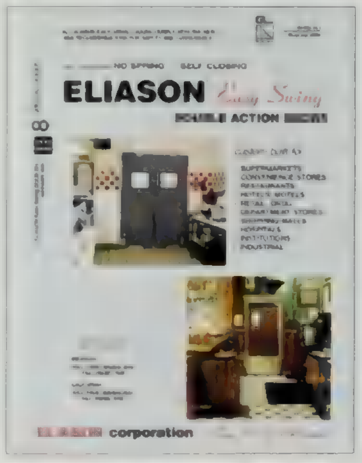
Weatherend® Estate Furniture

Offers 2 new brochures to supplement a color catalogue & resource binder. The 10 page brochures highlight quality site furnishings & amenities from a collection of more than 60 products. Installation photos of standard & custom furnishings are featured in interior & exterior contract & residential applications. For brochures & info. call (800) 456-6483 or write P.O. Box 648, Rockland, ME 04841.

Weatherend® Estate Furniture

Circle 70 on the inquiry card.

Self Closing Double Action Doors

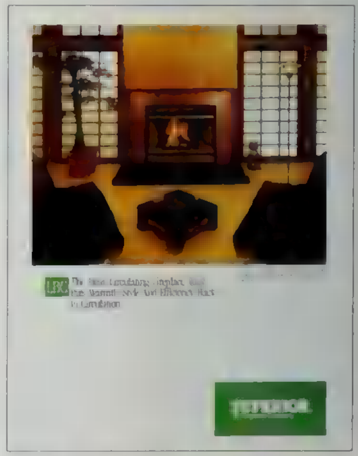


Complete specifications, usage & application data on Eliason Easy Swing double action doors is described in a new eight page color brochure. Doors are gravity operated, open to a light nudge & close automatically with a safe, gentle time delay action. Doors can be specified & purchased direct. A complete Price/Spec bound catalog will be sent illustrating many new door models, designs & decor options for 1993. Eliason Corp. P.O. Box 2128, Kalamazoo, MI 49003.

Eliason Corporation

Circle 71 on the inquiry card.

Heat-Circulating Fireplace



Warmth. Style. And efficiency. Just a few of the attributes of Superior's LBC heat-circulating fireplace. 2 sizes - 38" & 43" screen opening widths - the LBC offers a generous firebox: 24" high & 20" deep. LBC's recessed screen pockets, make the firebox opening appear larger. Aesthetically, the LBC offers typically Superior flair. It features a realistic masonry-look refractory, an integrated ash lip & decorative flexibility with your choice of either standard black or optional polished brass grilles.

Superior Fireplace Co.

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Velux-America Inc.

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Heisterholz

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Register & Grille Mfg., Co.

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Louisiana-Pacific

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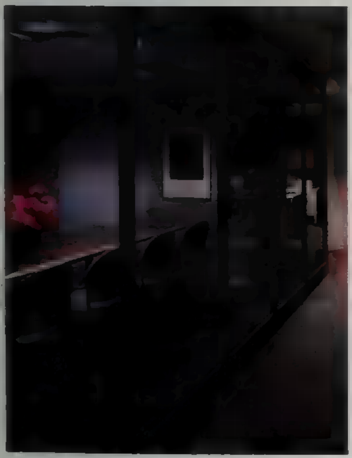
Open & Private Offices A Single Source



Transwall combines these two basic wall requirements for today's high tech office with its Soundivider open plan system and the full height Corporate series. The two systems offer complete interchangeability of wall mount components, as well as compatibility in design and appearance. Modular furniture blends with panel mounted work surfaces. Electrical and electronic support is system integrated.

Transwall Corp.

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Watercolors

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Kewaunee Fume Hoods

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Kewaunee Scientific Corp.

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A Practical Solution to Roof Paver Stone Applications

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Envirospec

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Product Literature Showcase

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Heat-N-Glo

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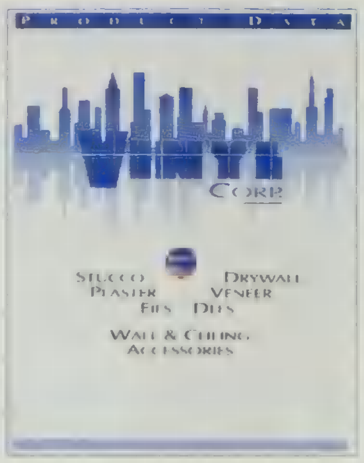
NEW PRODUCT CATALOG



Vinyl Corp manufactures the most extensive line of over 450 quality wall and ceiling accessories for stucco, plaster, EIFS, DEFS veneer and drywall. All accessories are exclusively manufactured with BF Goodrich Geon® Vinyl compounds. For more information call (800) 648-4695, and ask for Vinyl Corp's new product catalog. VINYL CORP, 8255 NW 70th Street, Miami, Florida 33166.

Vinyl Corp.

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Discover The Value In Basements

The Basement Design Guide from Koch Materials Company can help you discover new ideas in designing warm, dry, comfortable living spaces in below grade areas. This 20-page brochure highlights construction techniques and design considerations that help make the basement a value to you and your buyers. Includes information on a 10-year limited warranty against exterior foundation leaks.

Koch

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EFCO 1993 Product Catalog

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The 1993 **EFCO** Product Catalog is an invaluable tool for selecting Division 8 products. It features photographs of completed new construction & retrofit projects along with detail drawings & product info. It also includes complete product descriptions, specifications, performance ratings, lab test results, & options for the entire line. EFCO offers a complete line of Division 8 products plus custom designs & historical replications. For a free catalog: 1-800-221-4169.

EFCO Corporation

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SPIRAL STAIRS

Stairs built by Stairways Inc. are distinctively styled, combined with the highest standards of craftsmanship. Stairs are built to your exact specifications for commercial, industrial, or residential projects. Stairs can be fabricated in steel, wood, stainless, brass, aluminum, bronze, with other materials available. You have the option of stairs both wood & steel, completely fabricated for installation or kit form. For more info. Call 800-231-0793 or FAX 713-680-257[illegible]

Stairways Inc.

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Xypex Chemical Co.

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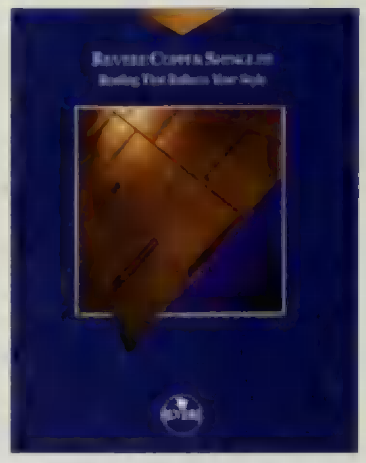
Revere Copper Shingles

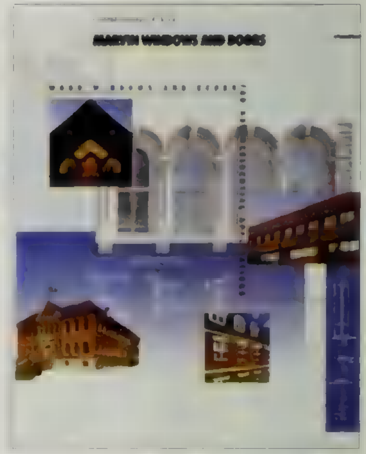


Revere Copper Shingles are quicker and easier to install than ordinary asphalt shingles. There are no special skills required and no special tools. Because Revere shingles are manufactured from solid copper, not a foil laminate, they will likely last as long as the building they protect. To learn more about our copper shingles, or any of our other copper roofing products, call us toll-free at 800-448-1776.

Revere Copper Products

Circle 87 on the inquiry card.

Marvin Windows' New Commercial Catalog



Marvin Windows' new commercial catalog describes the commercial capabilities of Marvin's entire line of wood and clad wood windows and doors. The catalog provides information on product styles, performance and design capabilities, as well as Marvin's Architectural Support Department and other non-residential services.

Marvin Windows

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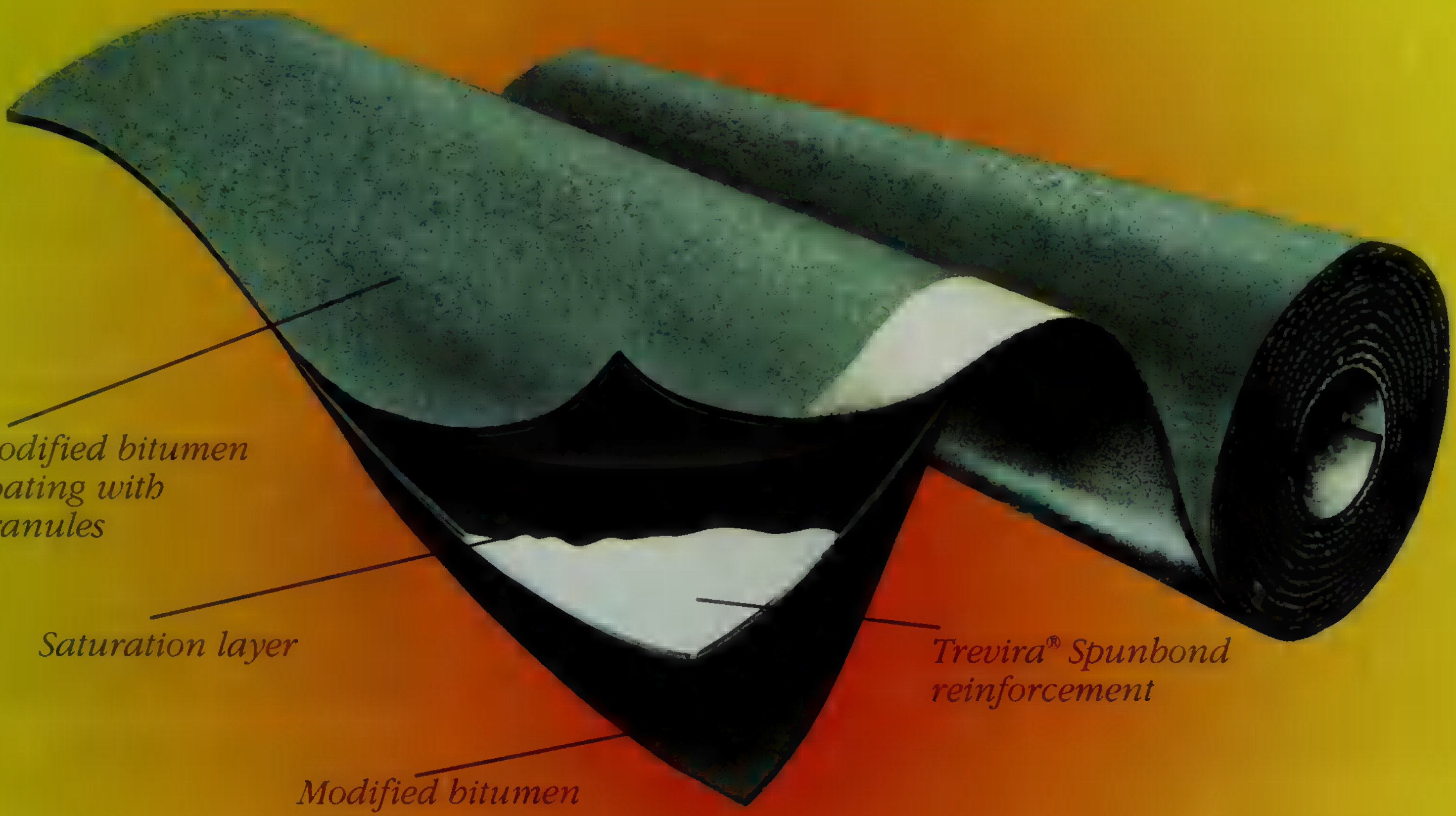
TREVIRA® SPUNBOND...

The Pioneer Polyester Reinforcement for Roofing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Saturation layer
Trevira® Spunbond reinforcement
Modified bitumen coating

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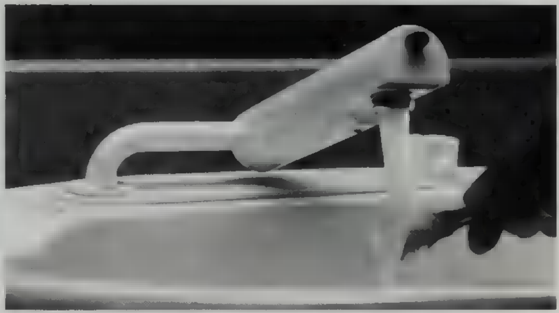
New Products

continued from page 126

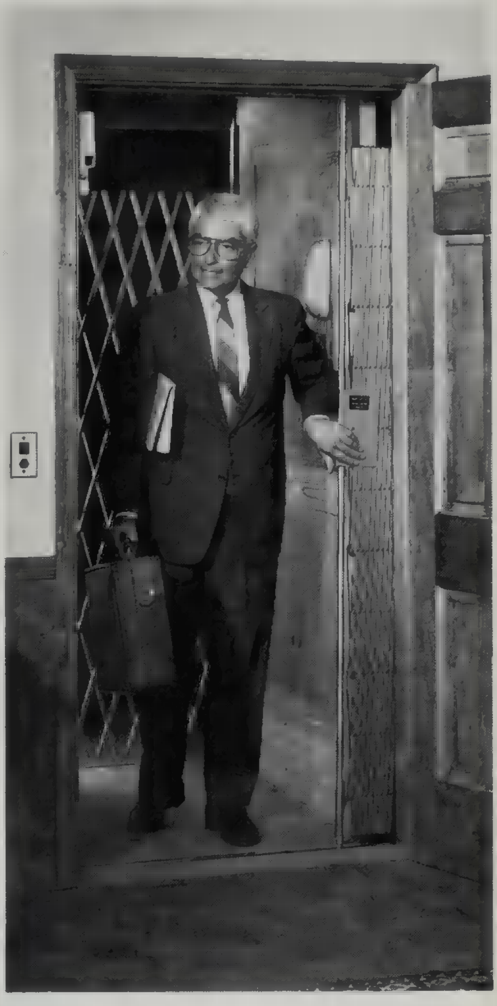
314. 'Sixties classic reissued
Designed in 1966 specifically for Florence Knoll's oceanside Florida home, a seven-piece outdoor furniture group is available for the first time since Knoll stopped making it in the late '80s. Chairs and chaises, manufactured under the designer's supervision, use the original materials: cast- and extruded-aluminum frames with vinyl-mesh sling seats. Richard Schultz Design, Barto, Pa.



315. Residential infrared faucet
Automatic, sensor-activated faucets are offered in shapes and finishes appropriate for the home bathroom (above) and kitchen. Said to be easy to install with snap-together electronic connections, the U. S.-made Contempra faucet uses about 80 percent less water than manual fittings. A push button permits continuous water flow; temperature and operating sensitivity are adjustable. WaterFacets, Costa Mesa, Calif.

316. Loop-handle pull-out faucet
The EuroPlus lavatory faucet has a spout that pulls out 21 inches, making it easier to wash hair or babies in the basin. Can be fitted with a water-pressure toothbrush. Grohe America, Inc., Wood Dale, Ill. ■

A Higher Level of Luxury



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Sales offices

Main Office

McGraw-Hill, Inc.
1221 Avenue of the Americas
New York, New York 10020

Publisher
Roscoe C. Smith III (212) 512-2841

Administrative Assistant
Anne Mullen (212) 512-4686

Director of Business and Production
Joseph R. Wunk (212) 512-2793
Fax: (212) 512-4256

Assistant Promotion Manager
Sheryl Berger (212) 512-2234

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Editorial
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District Offices

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(404) 843-4781
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Los Angeles
Media Sales Associates
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Sherylen Young
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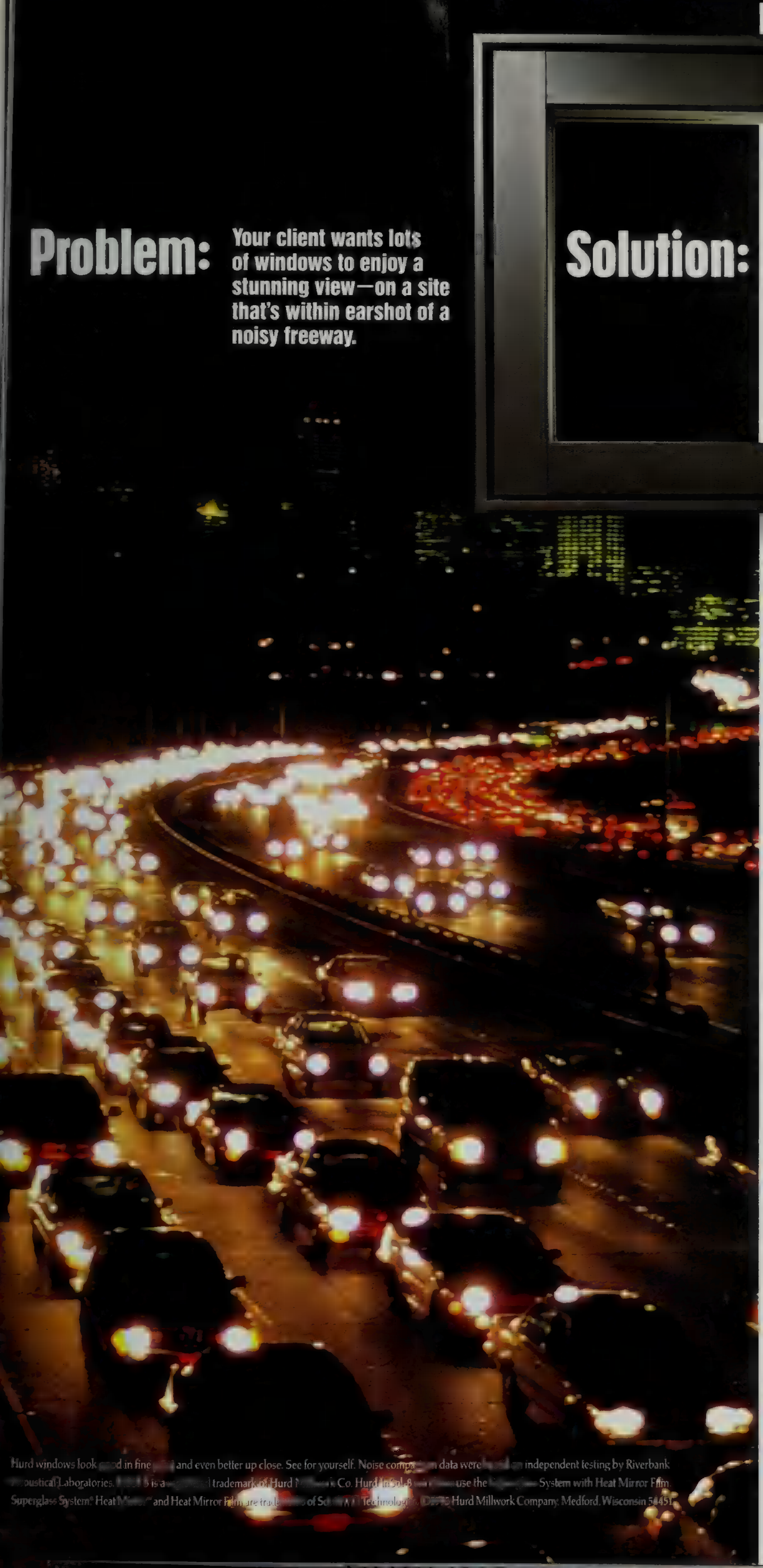

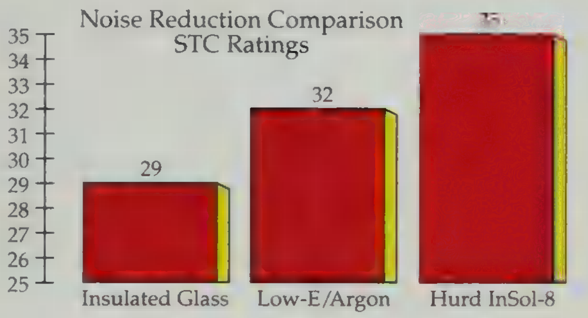

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WOOD WINDOWS

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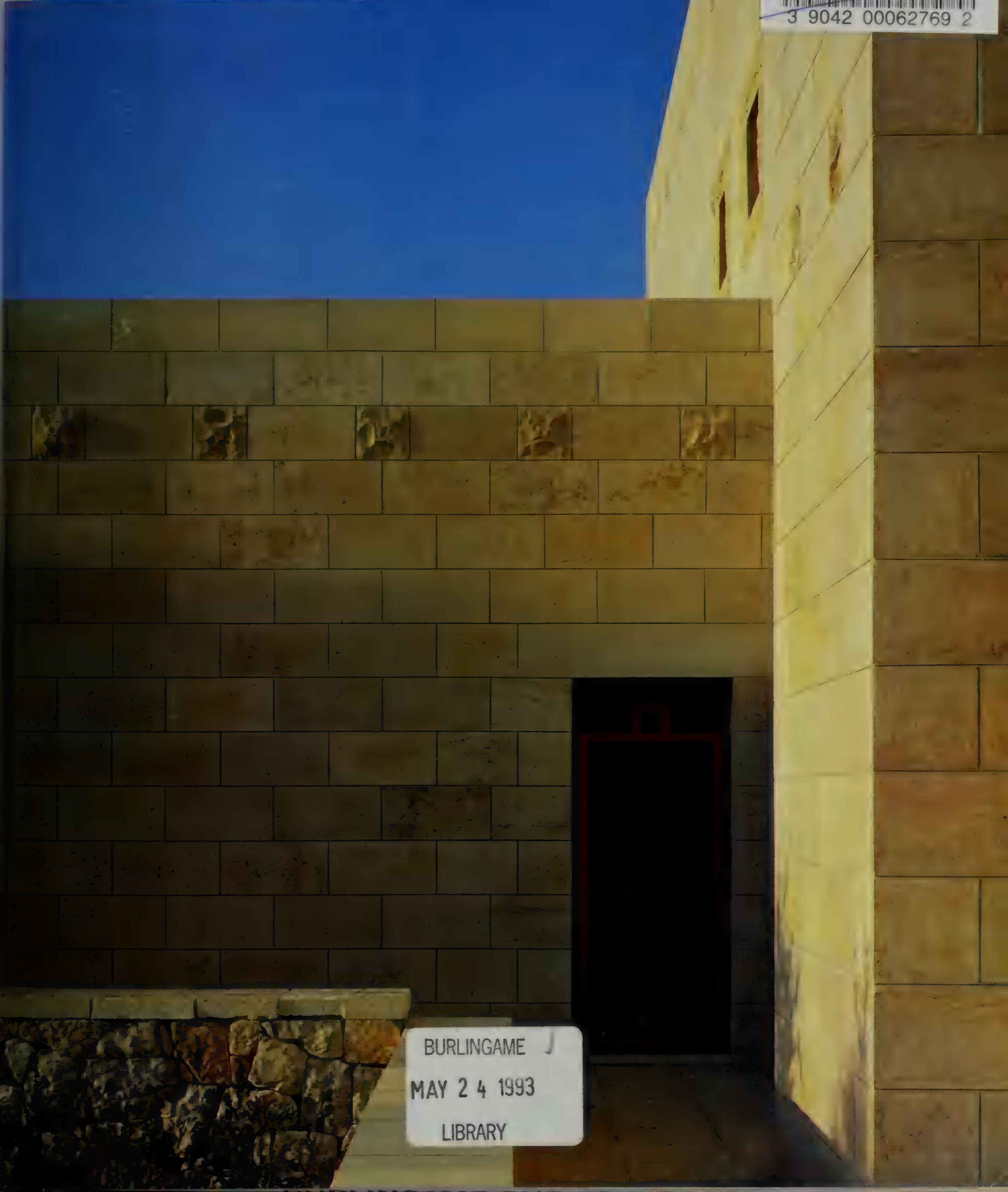

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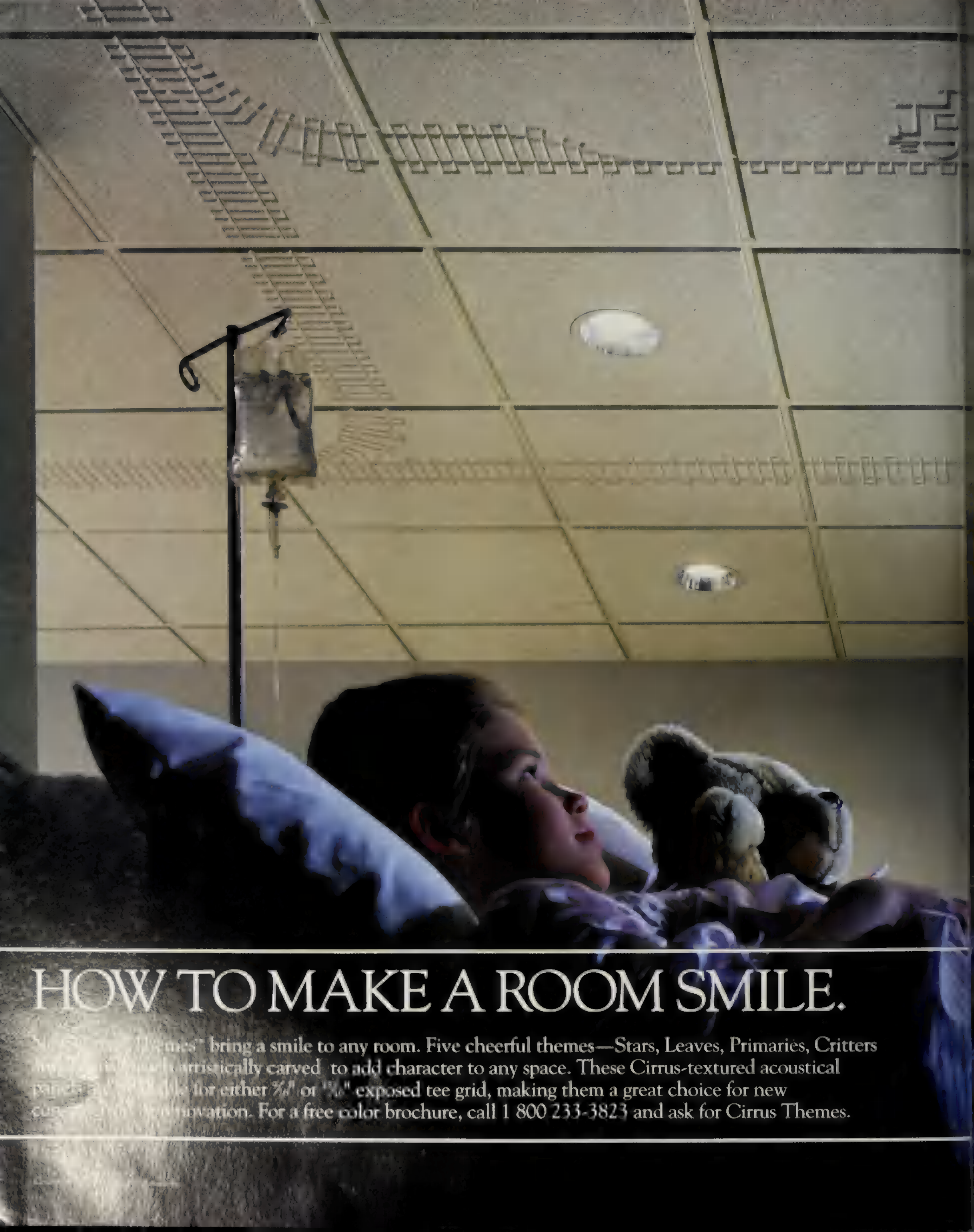

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Letters

Partnering Makes Sense

When I read the *Wall Street Journal* article you referenced in your March editorial [RECORD, page 9], it sounded so alien to our usual experience with others in the construction industry that the article might have been describing life on Mars.

Of course we occasionally have difficult situations and difficult people to deal with, but these are aberrations, not the norm. We have been doing "partnering" all our professional lives—we just didn't know that was what we were supposed to call it.

We are social friends with contractors, subcontractors, and suppliers; we play golf with them, our children go to school together, and we serve in civic organizations with them. We worship together and we call on each other informally for technical assistance in the pursuit of our work.

I suppose we lead sheltered lives if the conditions and attitudes *The Wall Street Journal* article described are typical elsewhere, and I am immensely thankful.

Frank Orr
Orr/Houk & Associates Architects Inc.
Nashville, Tennessee

Your March editorial leaves this chapter of the Associated General Contractors of America (AGCA) with some strong mixed emotions. You paint an image of contractors as gunslingers with no interest in commitment, trust, understanding, and excellence.

You label the American Consulting Engineers Council the "main champion" of this "civilized method" called partnering. Without minimizing ACEC's activity in this area, AGCA has been the leading proponent in the construction industry of "partnering" along with the Corps of Engineers.

The next time you write an editorial, do some homework outside the architectural and engineering communities. You may find there is a larger world out there with other members of the construction industry contributing to the industry's well-being also.

One of the biggest single reasons for contentious construction projects is poor-quality design. Too often we have witnessed partnering sessions where the architect whined about having to share the modest cost of the sessions, while others demanded the client pay for their time. Is this called "partnering?"

Jeffrey J. Zogg
Managing Director
General Building Contractors of New York State, Inc.
Albany, New York

Messeturm and Messe Hall

We are disappointed that the photos with the "Frankfurt Campanile" article [RECORD, February 1993, page 70] didn't include the three-part urban ensemble mentioned in Tracy Metz's description. Messeturm was designed to work with the other two elements—Messe Halle and the registration pavilion.

Keith H. Palmer
Murphy/Jahn Architects
Chicago, Illinois

Correction

In your Pacific Rim section [RECORD, March 1993, page 16], Jurong Town is *not* a new project; rather the International Business Park is.

Joanna How
Singapore

Calendar

Through December 31

"From Mars to Main Street: America Designs, 1965-1990," National Building Museum, Washington, D. C. Call Donna Anderson 202/272-3606.

May 7-31

Heritage Designer Showhouse and Gardens, Briarcliff Manor, N. Y., for the benefit of SciencePort, a hands-on science museum. Call 914/337-4287.

May 14

A/E/C Seminar "For A/E's Only: TQM 101" focuses on unique needs of A/E's and overview of TQM basics. Call Joan Faherty, 212/682/6336. Similar conferences May 21 in Cheyenne (Dee Clary, 307/632-7720); June 8 in Anaheim, Calif. (Kelly Savage), 215/489-8949.

May 14-16

International Council of Shopping Centers Spring Convention, Las Vegas, Nevada. Theme: "Powered Up . . . Adding Value." Call Karen Vonder Schmalz, 212/421-8181, ext. 315.

May 18-June 25

"The Architect and the Photograph" exhibition of photography by three prominent architects. The National Institute for Architectural Education, 30 W. 22nd St., New York, N. Y. Call Joan Bassin, 212/924-7000.

Competitions

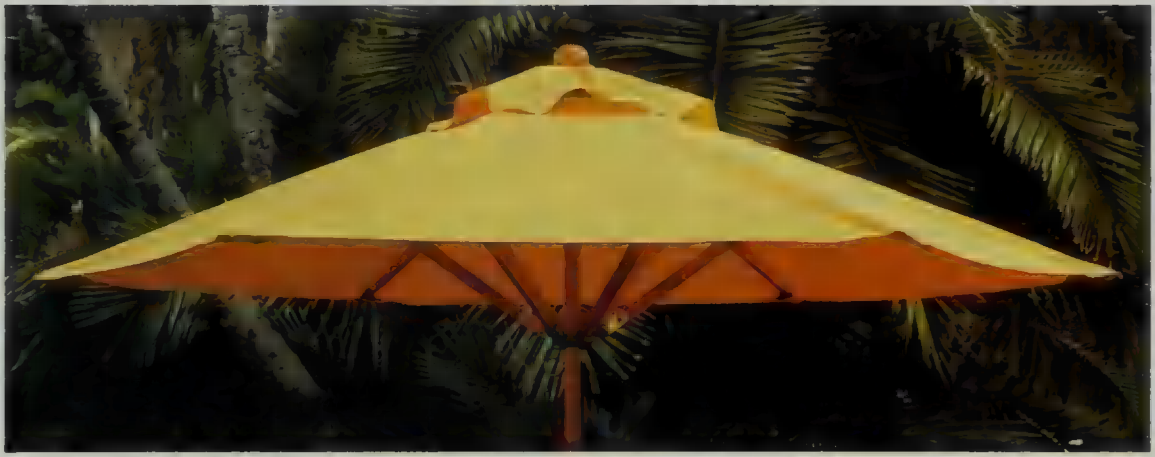
New York Coalition of Black Architects/National Organization of Minority Architects' 18th Century African Burial Ground Memorial Design Competition. Registration deadline, June 1; entry deadline, August 6. Write NYCOBA/NOMA, Box 5623, Manhattanville Station, New York, N. Y. 10027.

Benedictus Awards for innovation in architectural use of laminated glass; June 1 entry deadline. Call 202/785-2324 or 302/774-1964 for details. ■

Elegance and the elements . . .

Consider the umbrella.

Furled tightly, doubling as a walking stick for a proper English gent, or opened wide against the weather, can there be a more elegant solution? The venerable brolly -- a brilliant, sleek, chic, portable, impeccable yet implacable shelter from rain or sun -- has been around almost as long as the wheel. The ancient Egyptians used the device as a symbol of divinity. Eventually, someone must have noticed that kings stayed enviably cool, because a few hundred years later in Greece, the folding frame had been added and every Tom, Dick and Herodotus was sporting an umbrella. Though sold on every wet city street corner, the umbrella has never lost its symbolic power or its sly-tech gee wizardry. The Doge of Venice carried a golden model. Presidents have secret service umbrella bearers. Gene Kelly used his as a dancing partner. Mary Poppins would have been just another down-to-earth nanny without hers. And with dazzling pluck, an English officer named Digby Tatham-Warter carried his into battle at Arnhem and survived, untouched by mortar fire or rain. Christo liked the umbrella so much he unfurled hundreds of them on the hills of California and Japan. Art imitates ingenuity.



Now, reconsider the umbrella, as we have.

Stationary, ample, taking tables and chairs under its protective wing, offering comfort to the sunstruck or rain-chased, the umbrella as public amenity -- a grace note where a grace note is most needed -- requires the standards of fine architecture. And though we wouldn't be so foolish as to try making fundamental changes in something so quintessentially right, we don't mind pointing out some of the refinements that set our Skiá umbrella apart. A classic round finial, for instance. All wood and brass construction. And a separate wind vent hood that turns gusts into zephyrs. With penetrating wood stains, you can customize umbrellas in a proper post-modernist's mix-or-match style (this is *not* your father's umbrella!), and if none of the ten colors of double-stitched acrylic fabric we offer are quite right, just call and tell us about it. Even if you happen to be the Doge of Venice.

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WE NEEDED A WINDOW COMPANY WITH THE RESOURCES
TO PULL OFF THE BIGGEST JOB IN HISTORY.

Building Owner: Metropolitan Life Insurance Company *Consultant/Engineer*: Gordon H. Smith Corporation
Architect: [illegible] Condylis Architects P.C. *Construction Manager*: Lehrer, McGovern, Bovis, Inc. *Product*: Custom Windows

On Manhattan's East Side, the restoration o Stuyvesant Town and Peter Cooper Village was about to begin. Met Life had taken on a monumental undertaking, and everything was riding on this one. The window replacement alone would be the biggest in history. We needed a company with the financial stability and capacity to see the project through.

We awarded the job to EFCO.

EFCO

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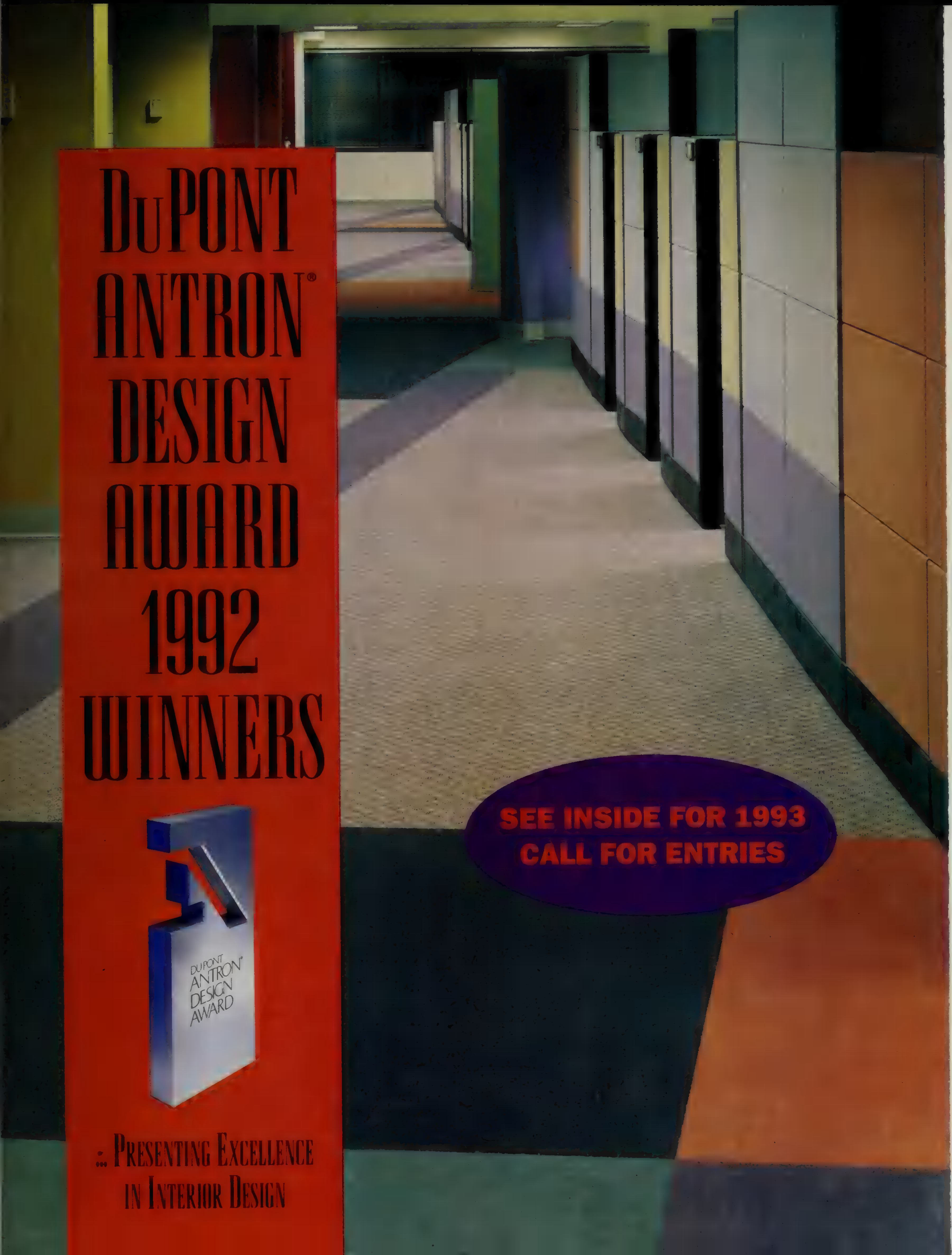

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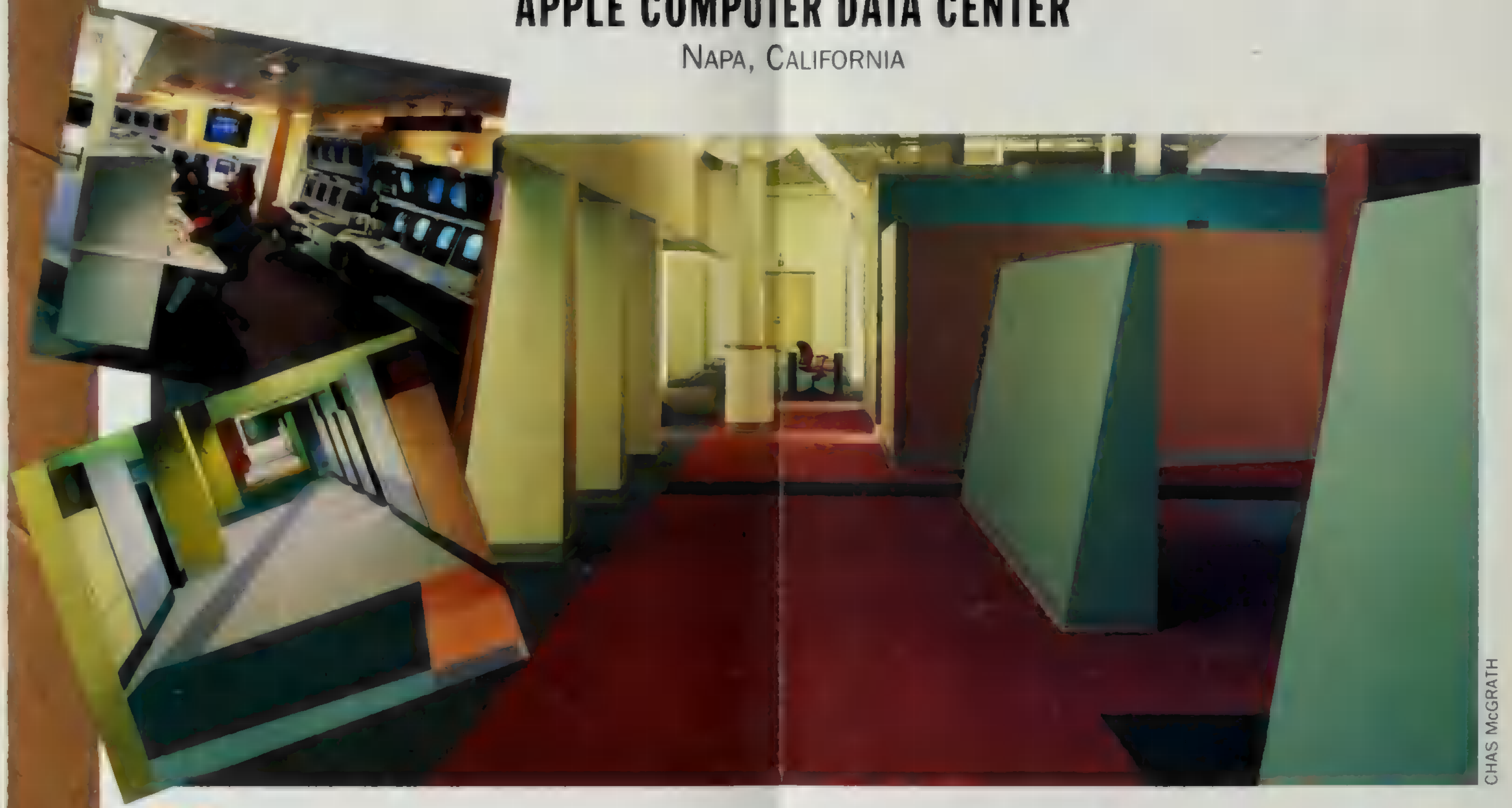
SEE INSIDE FOR 1993 CALL FOR ENTRIES

THE 1992 GRAND PRIZE WINNER

Phyllis Martin-Vegue/ Simon Martin-Vegue Winkelstein Moris

APPLE COMPUTER DATA CENTER

NAPA, CALIFORNIA


CHAS McGRATH

FOR THE THIRD TIME IN THE DUPONT ANTRON® Design Award's 10-year history, Phyllis Martin-Vegue of Simon Martin-Vegue Winkelstein Moris, the San Francisco-based designer, has led the grand prize-winning team. This year, she won top honors for her design of the Apple Computer Data Center in Napa, California.

Originally built for another tenant, the facility offered huge, drab expanses of uninterrupted floor space. The objective was to break up the space into smaller elements for offices, support services and general circulation. And, to have the new environment reflect Apple's energetic and interactive culture.

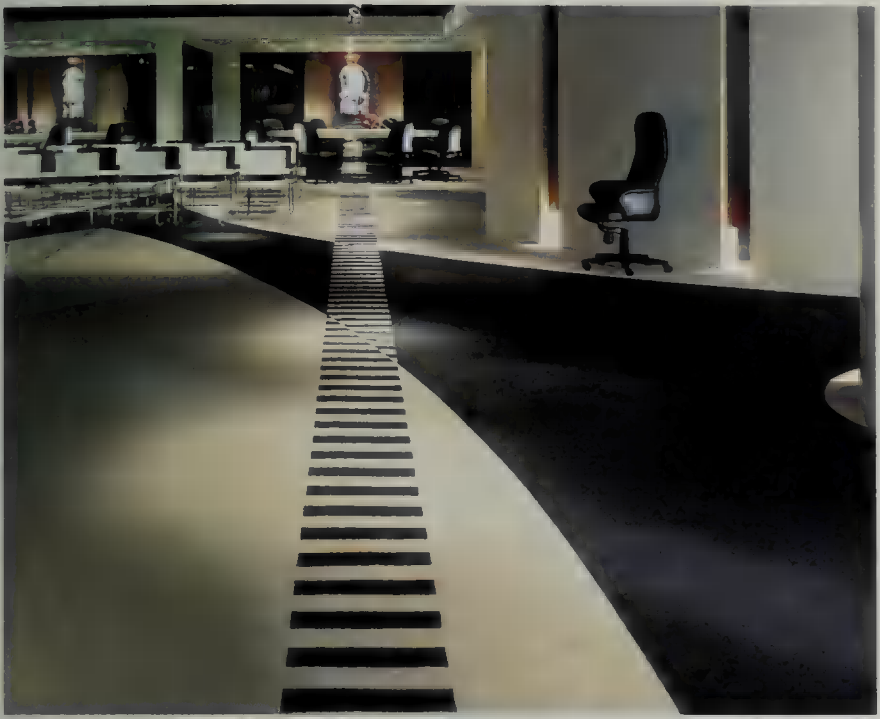
The designers' solution was to create an open "spine" down the center of the building which enables employees to interact with each other spontaneously throughout the work day. Central to the office area is a circular hub — featuring common areas such as conference rooms, copy rooms and break rooms. Work stations are grouped in neighborhood clusters.

The designers also felt that the original gray carpet tiles, which had been laid in a straightforward [illegible] pattern, were inappropriate for a facility in the warm, bright Napa Valley. And, since the carpet had to be removed temporarily so the raised access floor could be reinforced, they seized the opportunity to be more creative.

> "The space has broken all the traditional rules and allowed flooring to enhance the theme by also carrying the whimsy."

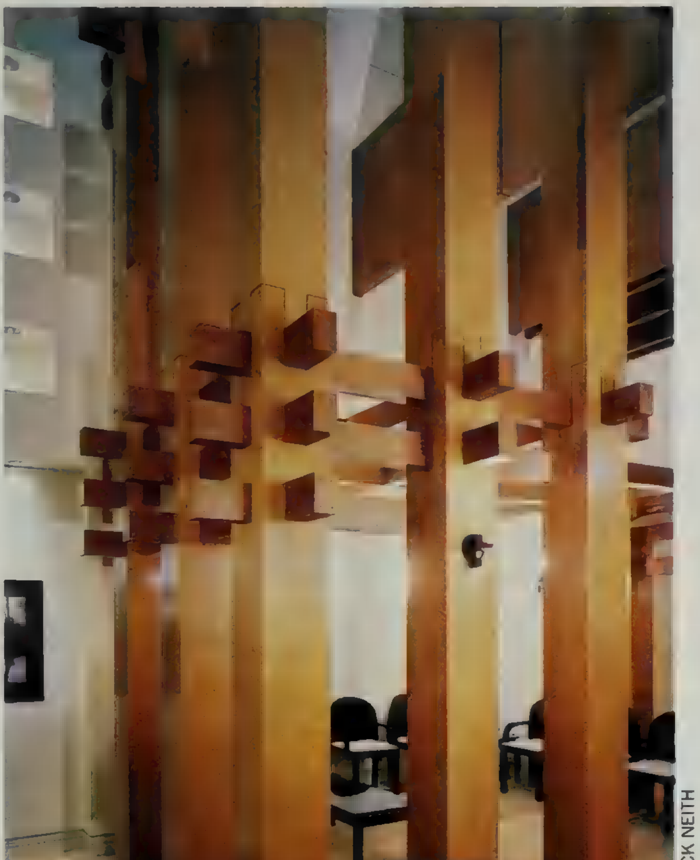
They reused the existing carpet tiles of DuPont ANTRON® Legacy from Milliken & Company, Inc. in the style of "Corporate Square Nova" as a background field. But, they added stripes, bands and other geometric shapes of "Corporate Square Nova" in vibrant, bright accent colors. And they relaid the tiles in a new geometry — rotating the rectangular grid in the circular hub area to reinforce the interior architecture.

The bold use of carpet helps delineate the traffic circulation areas between the work station groupings and the central spine, and the color scheme is carried out on the walls, work station panels and furniture. Overall, the whimsical spatial planes and colors create an open office of implied boundaries and encourages creativity.

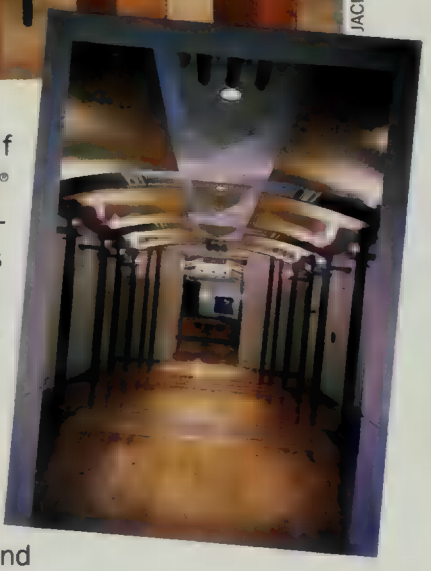


This award is an important way for DuPont to demonstrate the vital role designers play in our business. Partnering together, we have heightened the industry's awareness of quality interior design. Carpet has truly grown beyond its functional role as floor covering to an integral facet of interior design – one that enhances the work of architects and designers.

This year's winners, both student and professional, offer inspiration to the entire flooring industry. At DuPont, we continue to not only develop the best product, but to see these products used in the total context of the best interior design.



JACK NEITH



style "Trademark," of 100% DuPont ANTRON® Legacy nylon. The straw-colored carpet leads patients to the exam rooms while creating a "non-medical" atmosphere.

The physical therapy area, complete with state-of-the-art fitness equipment, serves as a valuable marketing tool and is visible through nine-foot-tall slot windows in the main reception area. The navy blue carpet and ceiling provide an understated elegance and showcase the equipment's high-tech sparkle.

"We dispensed with the traditional colors of most such places and prescribed a warm, almost ethereal feeling for the facility," Isogai said. "We wanted to invite patients into a comfortable environment where they will feel less apprehensive about facing their challenges."

"A beautifully handled interior, nicely complemented by craftsmanship in the materials on the floors, walls and ceilings."

WE NEEDED A WINDOW COMPANY WITH THE RESOURCES TO PULL OFF THE BIGGEST JOB IN HISTORY.

Building Owner, Metropolitan Life Insurance Company *Consultant/Engineer* Gordon H. Smith Corporation
Architect Costas-Kondylis Architects P.C. *Construction Manager* Lehrer, McGovern, Bovis, Inc. *Product* Custom Windows

On Manhattan's East Side, the restoration of Stuyvesant Town and Peter Cooper Village was about to begin. Met Life had taken on a monumental undertaking, and everything was riding on this one. The window replacement alone would be the biggest in history. We needed a company with the financial stability and capacity to see the project through.

We awarded the job to EFCO.

EFCO

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THE 1992 HOSPITALITY DESIGN AWARD WINNER

Frank H. Frost and Wendy H. Tsuji/ Frost Tsuji Architects

AQUA RESTAURANT

San Francisco, California

THIS AWARD-WINNING DESIGN INVOLVES A simple yet dynamically sculptured backdrop for a contemporary seafood restaurant in San Francisco's financial district. The stunning 3,000-square-foot space benefits from the use of warm, complementary colors of bisque and bronze.

For dramatic effect, an 85-foot-long curved wall is dappled by theatrical projector lights. These lights, focused with laser-cut, stainless steel templates, spray shadows on the wall without intruding on the muted, residential feel. Several overscaled mirrors (measuring 8 by 11 feet), tilted forward slightly, reflect the dining area simply, but with a sense of real theater. And the enduring image of water is reflected in the aqueous pattern and texture of the 100% DuPont ANTRON® Legacy nylon carpet in the style "Firenze" by Bentley Mills, Inc.

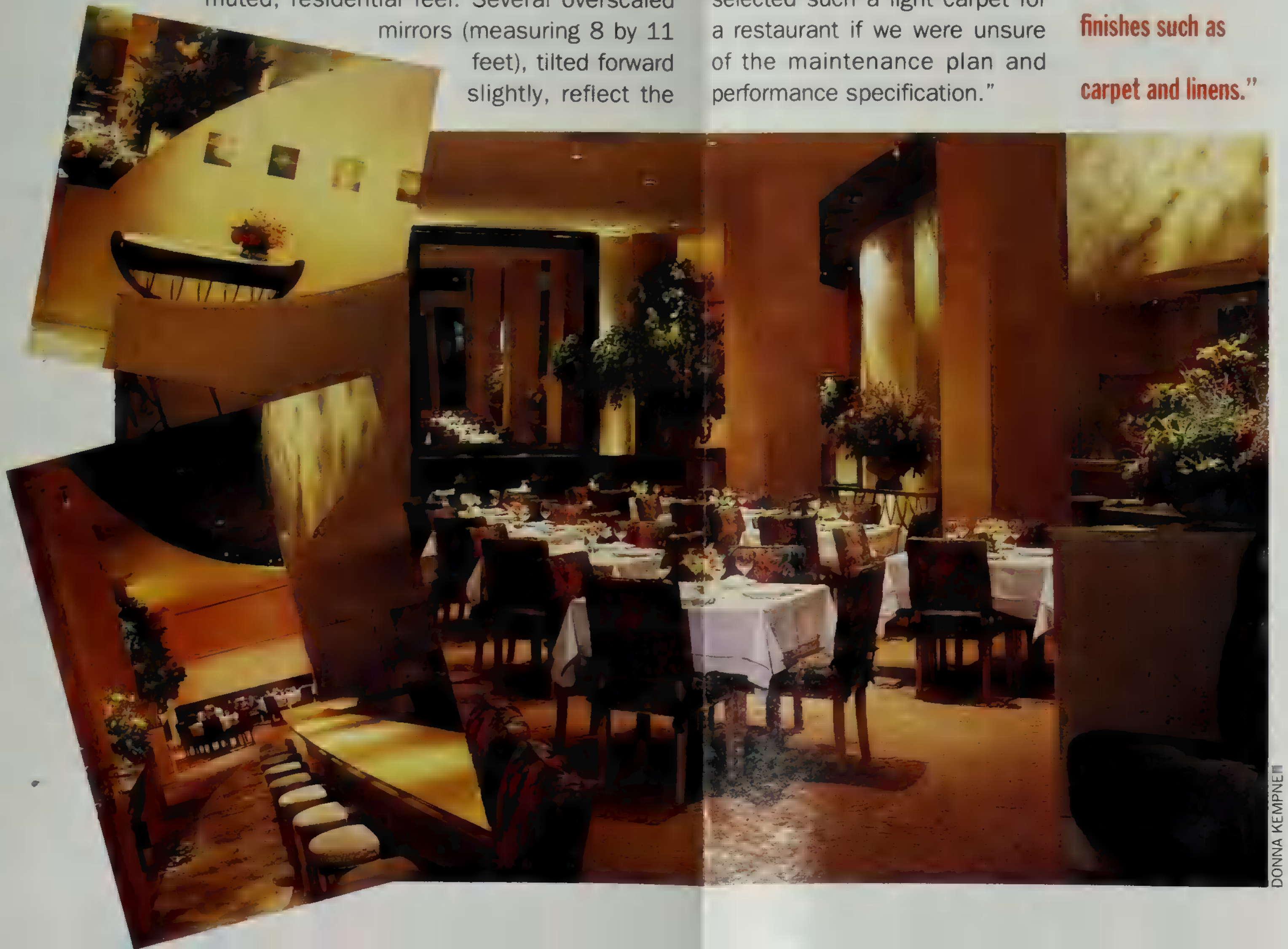
By combining contemporary forms and shapes of nature, or custom-fabricated materials with traditional elements, the architects have created a timeless, classic statement. For example, the fabrics on the slip-covered chairs are rotated to complement the seasonally changing flowers and food.

In the bar area, a subtle fish-scale pattern was achieved with a custom concrete paver. The effect resembles limestone, but was realized by a local craftsman at a fraction of the cost. Custom-colored carpet in the dining area continues the subtle theme in a salmon bisque color undulating pattern. The ceiling picks up on this hue with an iridescent glazing.

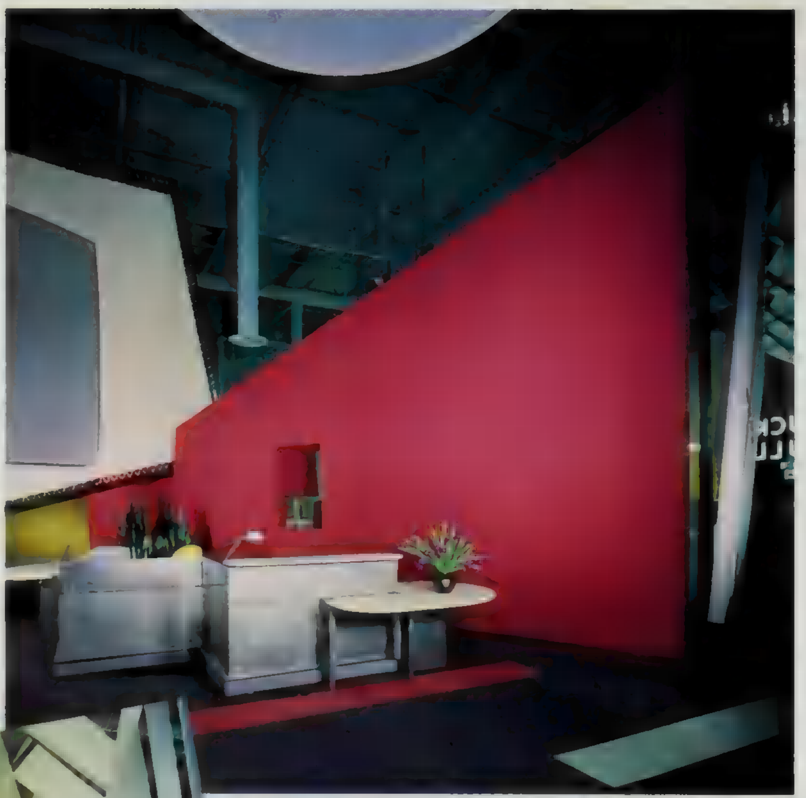
The architects selected materials carefully, and worked closely with the client to develop an ongoing maintenance program for every surface. For example, the patterned carpet was selected as much for its ability to withstand heavy cleaning as its aesthetic qualities.

"The maintenance commitment allowed us to specify the salmon color," Tsuji said. "We would typically not have selected such a light carpet for a restaurant if we were unsure of the maintenance plan and performance specification."

> "A sense of vibrant activity is neatly balanced by the hushed finishes such as carpet and linens."



DONNA KEMPNER


SHARON RISEDORPH

HARRIS ROGERS

THE 1992 SMALL OFFICES DESIGN AWARD WINNER

John Duvivier, Phil Binns, Mark Marcinik/ Bottom Duvivier

RUCKER FULLER FURNITURE SHOWROOM/OFFICE FACILITY

FREMONT, CALIFORNIA

RUCKER FULLER SELLS NEW AND SECOND-market office furniture and manages corporate moves. Their goal was to create a combination showroom-office facility for only $50 a square foot, but with the "on the edge" style commonly found in downtown San Francisco at a much higher cost. The location they selected was a nondescript 8,700-square-foot former warehouse space in suburban Fremont, California.

Bottom Duvivier (formerly HED Architects) created the award-winning solution, which uses Rucker Fuller's actual sales offices as vignettes of commercial furniture along a glass-enclosed exhibition corridor running the full length of the space.

Carpet plays a critical role in the traffic pattern. As traffic flows through the office, the corridor becomes a "shopping street" for Rucker Fuller's customers, complete with glass storefronts that look into prototypical office vignettes set up with product displays.

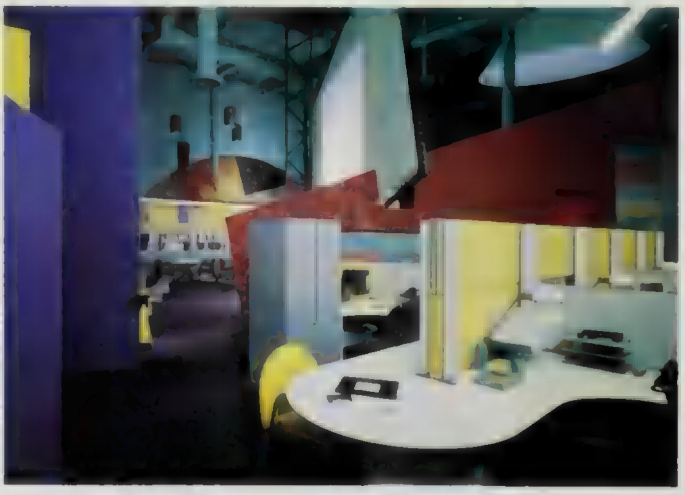
> "Color is an inexpensive way to provide a high level of energy."

The "shopping street" sits on "pavement stripes" of carpet of DuPont ANTRON® Legacy nylon from Lees Commercial Carpets in the style "Presence." Perpendicular accent stripes, also of DuPont ANTRON® Legacy from Lees in the style "Surfaces III," inject energy with spontaneity.

"We used a very rhythmic pattern of bars and stripes in the carpet to emphasize the non-rhythm of the other elements," Duvivier explained.

These "other elements" are functional spaces which include a skylit reception area, a resource library, conference rooms and a presentation area complete with video screen and aluminum bleachers. An enclosed manager's office also provides a more traditional setting to the space.

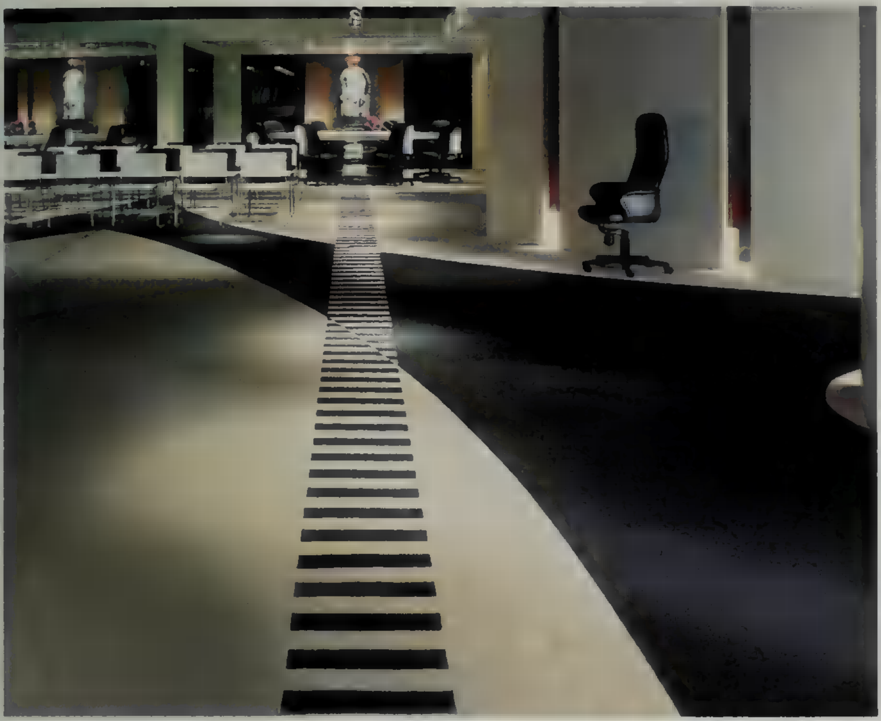
Throughout, bold color contributes to the contrast. The mostly neutral furniture stands out against strong saturated colors. And the conference rooms — located in three-dimensional shapes — are painted with darker, saturated color on the outside and brighter, fresh color on the inside. Thus, the setting goes from calm to invigorating, keeping the space highly interesting and visual.

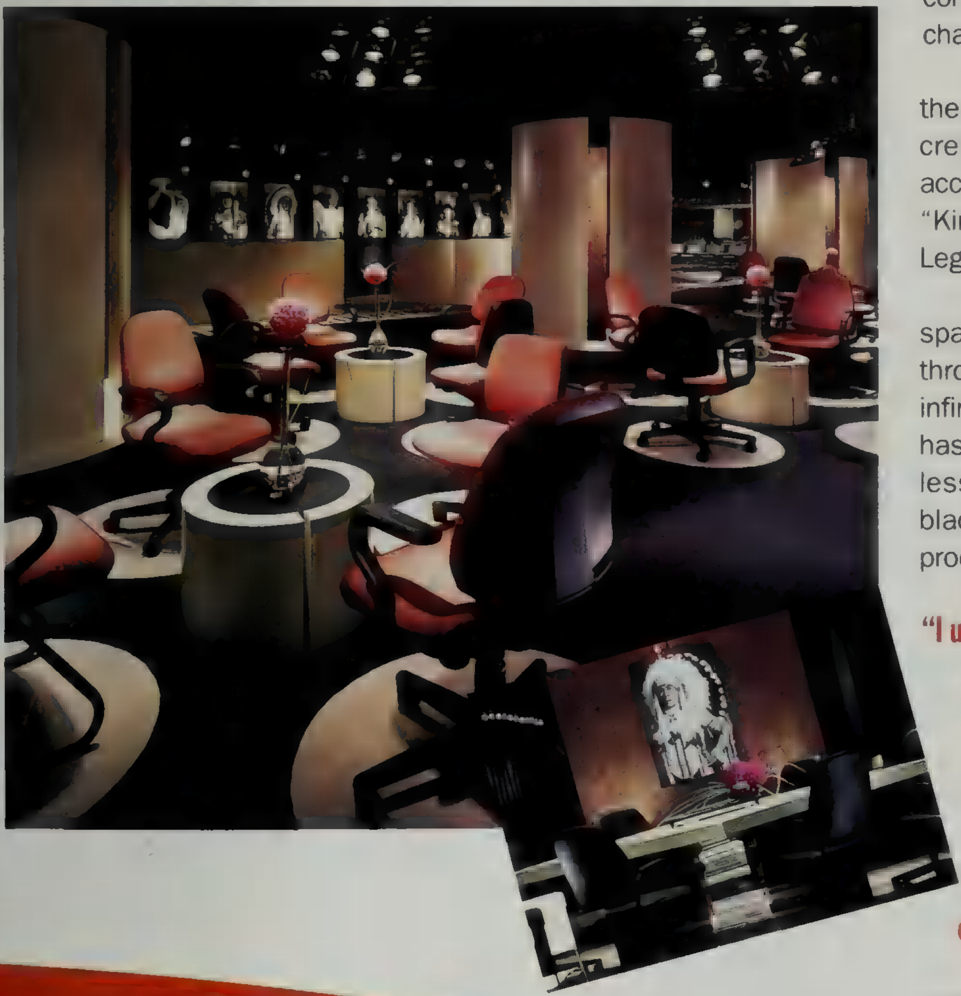

SHARON RISEDORPH

A MESSAGE FROM KEN HOSTELLEY

BUSINESS DIRECTOR – NORTH AMERICA
DUPONT FLOORING SYSTEMS

As the DuPont ANTRON® Design Award enters its second decade, our commitment to recognize the talents of architects and designers is as firm as it was 11 years ago.





THE 1992 STORE PLANNING DESIGN AWARD WINNER

Tom Gass

UNITED CHAIR SHOWROOM

CHICAGO, ILLINOIS

FOR THE SECOND YEAR IN A ROW, TOM GASS of Brooklyn, New York, has won a DuPont ANTRON® Design Award for the design of a United Chair showroom. This year, he was recognized for a dramatic selling space in Chicago's Merchandise Mart.

"United's chairs are designed for corporate environments that are nearly always carpeted," Gass commented, "so I used the relationship between the chairs and the carpet to create the element of theater."

The design clearly makes United Chair's product the star. An elaborately designed carpet of black and cream sets the stage, with sparingly used copper accents. The carpet, by Bentley Mills, Inc. in the style "Kings Road III," is made of 100% DuPont ANTRON® Legacy nylon.

Customers are drawn into the high-contrast space by a zebra striped carpet insert that continues through the showroom to the opposite end — as if to infinity. The zebra trail ends at a copper wall, which has a mirror insert that reinforces the sense of limitlessness. The carpet strip runs across alternating black and cream field carpets of the same Bentley product. The larger expanses of carpet are divided by arcs, echoed in the cream-colored, curved reception desk and curved walls.

"I used the relationship between the chairs and the carpet to create the element of theater."

The black carpet and black ceiling create a void, punctuated by spotlights above, and round, cream-colored carpet inserts below. Thus, the United Chair products are arranged both under and on top of spotlights. Copper accents throughout are picked up in the metallic material of the chairs so they emerge from the darkness.

Transitions from floor to wall to ceiling are eased by continuing colors from one surface to another. The curved walls and columns are cream to blend with the carpet. The palette of the showroom is nearly as simple as that of a tuxedo, and the effect is as sophisticated.

JON MILLER, HEDRICH

This award is an important way for DuPont to demonstrate the vital role designers play in our business. Partnering together, we have heightened the industry's awareness of quality interior design. Carpet has truly grown beyond its functional role as floor covering to an integral facet of interior design – one that enhances the work of architects and designers.

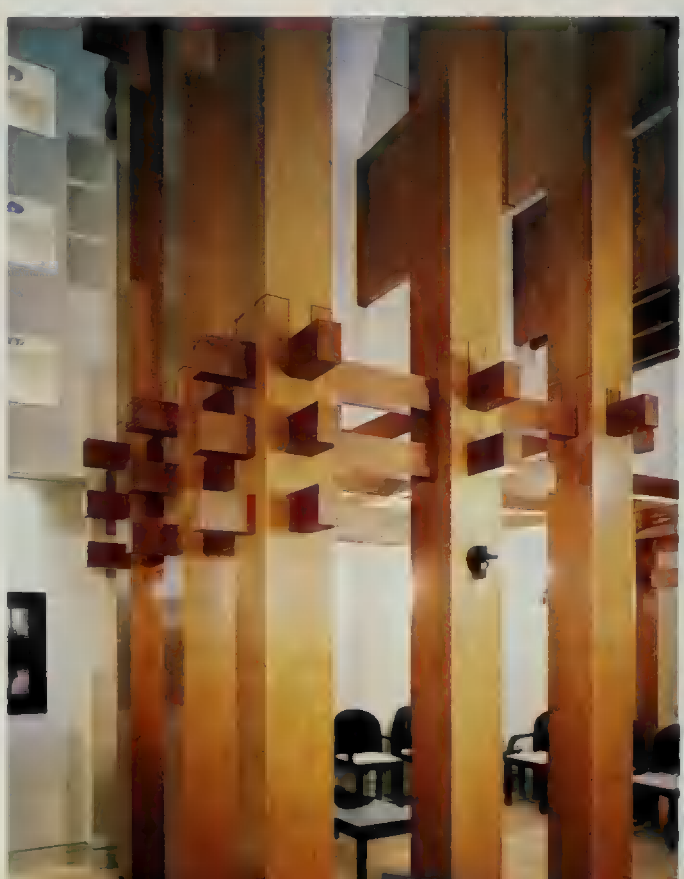
This year's winners, both student and professional, offer inspiration to the entire flooring industry. At DuPont, we continue to not only develop the best product, but to see these products used in the total context of the best interior design.

THE 1992 HEALTHCARE DESIGN AWARD WINNER

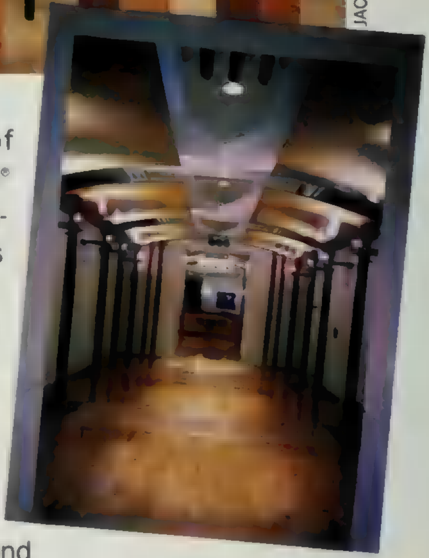
Hiro Isogai, Sheila Spriggs Nall, ASID, Mac Hicks, AIA / Farrington Design Group

RESURGENS ORTHOPAEDIC SPORTS MEDICINE FACILITY

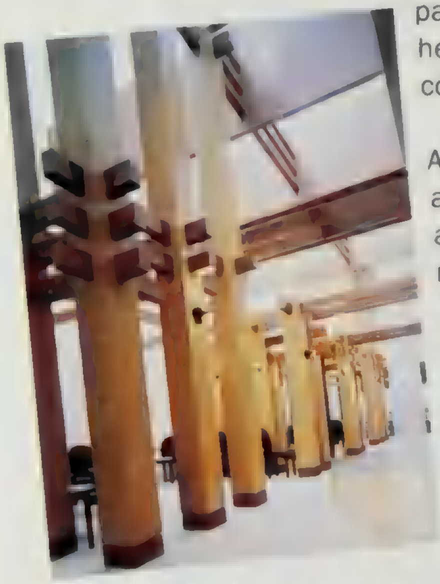
ATLANTA, GEORGIA



JACK NEITH



THE DESIGN TEAM RESPONSIBLE FOR THIS outstanding sports-medicine facility was encouraged to express — with architectural and design elements — the relationship between the human body's muscular and skeletal systems. And to create an exciting and comfortable space for patients, in contrast to many healthcare facilities that are cold and intimidating.



The Resurgens facility in Atlanta includes exam rooms and physical therapy areas, and features a two-story, naturally lighted reception area where a monumental bird's eye maple and aniegre wood trellis creates changing light and shadows. Sunlight floods the entire office through floor-to-ceiling windows that line the suite's perimeter and through skylights above the nurse's station areas.

"Just as soft tissue and muscle integrate with hard skeletal bone, we contrasted natural-feeling materials — such as wood floors and straw-colored carpet — with slate, painted dark exposed ceilings and dark blue pipes," Isogai explained.

Throughout the facility, various floor materials support the scheme and act as a way-finding aid for visitors. The hard stone and slate entry area gives way to hallways of soft carpet by Harbinger in the style "Trademark," of 100% DuPont ANTRON® Legacy nylon. The straw-colored carpet leads patients to the exam rooms while creating a "non-medical" atmosphere.

The physical therapy area, complete with state-of-the-art fitness equipment, serves as a valuable marketing tool and is visible through nine-foot-tall slot windows in the main reception area. The navy blue carpet and ceiling provide an understated elegance and showcase the equipment's high-tech sparkle.

"We dispensed with the traditional colors of most such places and prescribed a warm, almost ethereal feeling for the facility," Isogai said. "We wanted to invite patients into a comfortable environment where they will feel less apprehensive about facing their challenges."

"A beautifully handled interior, nicely complemented by craftsmanship in the materials on the floors, walls and ceilings."

Private Practice vs. The Staff Architect: Time for Reconciliation

One of the worst-kept secrets is the strained relationship between architects in private practice and architects who work on the facilities staffs of a corporation or government agency. Causes of tension are basically economic. There's also an issue of empowerment, but in the end it comes down to fees: private practitioners believe that the staff architect takes away work that is rightfully theirs.

In routine contacts with private practitioners, I hear this:
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- By taking care of modest, routine, often unglamorous jobs, such as small renovations and remodelings, they can offer the private architect the more interesting commissions.

In Europe the staff architect's position is by tradition far more powerful—witness the important work done by public agencies in Britain in such areas as housing and transportation facilities. Here at home, a coalition of San Francisco architects has been meeting with city agencies to work out a creative partnership. On the other hand, says architect Arthur Rosenblatt, vice president of the Grand Central Partnership and former vice president of the Metropolitan Museum of Art, not enough architects use their positions in industry or government to champion good design. Either way, the rough edges won't go away anytime soon. Too many careers are at stake, too much income, too many egos.

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Stephen A. Kliment

THE 1992 HOSPITALITY DESIGN AWARD WINNER

Frank H. Frost and Wendy H. Tsuji/ Frost Tsuji Architects

AQUA RESTAURANT

San Francisco, California

THIS AWARD-WINNING DESIGN INVOLVES A simple yet dynamically sculptured backdrop for a contemporary seafood restaurant in San Francisco's financial district. The stunning 3,000-square-foot space benefits from the use of warm, complementary colors of bisque and bronze.

For dramatic effect, an 85-foot-long curved wall is dappled by theatrical projector lights. These lights, focused with laser-cut, stainless steel templates, spray shadows on the wall without intruding on the muted, residential feel. Several overscaled mirrors (measuring 8 by 11 feet), tilted forward slightly, reflect the

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THE 1992 SMALL OFFICES DESIGN AWARD WINNER

John Duvivier, Phil Binns, Mark Marcinik/ Bottom Duvivier

RUCKER FULLER FURNITURE SHOWROOM/OFFICE FACILITY

Fremont, California

The "shopping street" sits on "pavement stripes" of carpet of DuPont ANTRON® Legacy nylon from Lees Commercial Carpets in the style "Presence." Perpendicular accent stripes, also of DuPont ANTRON® Legacy from Lees in the style "Surfaces III," inject energy with spontaneity.

"We used a very rhythmic pattern of bars and stripes in the carpet to emphasize the non-rhythm of the other elements," Duvivier explained.

These "other elements" are functional spaces which include a skylit reception area, a resource library, conference rooms and a presentation area complete with video screen and aluminum bleachers. An enclosed manager's office also provides a more traditional setting to the space.

Throughout, bold color contributes to the contrast. The mostly neutral furniture stands out against strong saturated colors. And the conference rooms — located in three-dimensional shapes — are painted with darker, saturated color on the outside and brighter, fresh color on the inside. Thus, the setting goes from calm to invigorating, keeping the space highly interesting and visual.

A MESSAGE FROM KEN HOSTELLEY

Business Director – North America
DuPont Flooring Systems

As the DuPont ANTRON® Design Award enters its second decade, our commitment to recognize the talents of architects and designers is as firm as it was 11 years ago.

THE DuPONT ANTRON® DESIGN AWARD

The Interior Design Industry's 1993 Call for Excellence

TAKE THE CHALLENGE

Your entry must be a commercial interior project that has been completed since June 1990. Entries will be judged based on their originality, creativity and style. The winners will be selected on the basis of *overall design* in which the carpet contributes significantly. All entries must feature carpet of 100% DuPont ANTRON® nylon.

Entries are welcome in any of the following six project categories:

- Large Offices *(with a total area greater than 20,000 sq.ft.)*
- Small Offices *(with a total area 20,000 sq. ft. or less)*
- Hospitality Facilities
- Healthcare Facilities
- Public Spaces
- Store Planning

WHO CAN ENTER

Professional architects and interior designers working in North America are invited to submit their work. Design teams are limited to three persons per entry. Employees of DuPont, its advertising, public relations and promotional agencies and their relatives are ineligible to participate. Students interested in submitting entries should call (212) 614-4877 for information on the Student Design Award Competition.

HOW TO ENTER

Please complete all sections of the accompanying submission form. Each entry must be submitted in a separate envelope with a separate design rationale and submission form. Photocopies are acceptable. All entries must include the following materials:

Photography. You may submit a maximum of four 35mm *original* color slides or 4" x 5" *reproduction quality* transparencies. Prints are not acceptable. Because photography will be used to evaluate your overall design concept and creative use of carpet, *we strongly recommend professional quality photography.* Please do not mix slides and transparencies in a single entry.

Design Rationale. Submit a succinct statement describing your project, one page in length on plain white paper. Do not identify your name or design firm on the rationale or submit it on company letterhead. The rationale must cover the nature of your client's business, special design requirements and constraints, how the overall design helped meet them and how carpeting was part of the design solution. All entries become the property of DuPont and may be used in advertising, brochures, publicity releases and other promotional materials as appropriate.

No entries can be returned.

JUDGING

Jurors will be selected from among top designers in North America. The selection of winners will be at the sole discretion of the jurors. All entries will be pre-screened for compliance with rules.

GREAT REWARDS AND RECOGNITION

The Grand Prize. The grand prize winner will receive a cash award of $10,000 plus a specially-crafted trophy. If won by a team, the winners will share the prize. Grand prize winners will be notified by mail in the Fall.

Category Awards. A selected number of $1,000 prizes will be awarded to individuals or teams for outstanding design achievements in specific categories.

National Recognition. All winners will benefit from an intensive national publicity program focused on the architect/designer press. In the last two years, stories featuring the DuPont ANTRON® Design Award have appeared in *Architectural Record, Interior Design, Interiors, Designers West, Contract* and other prestigious design publications.

**If you have questions...
feel free to call
the DuPont ANTRON
Design Award Center at
(212) 614-4877**

OFFICIAL ENTRY FORM

Submit your entry to the DuPont ANTRON® Design Award Center postmarked no later than July 1, 1993. Winners will be notified by mail in the Fall of 1993. Mail your submission form, design rationale and photography to: DuPont ANTRON® Design Award Center, Burson•Marsteller, 230 Park Avenue South, New York, NY 10003.

Architect/Designer (Maximum: 3 persons)

Company Name

Company Address

Telephone Number

Client

Site and Address

Date of Completion

Entry Category (Check One):

☐ **Large Offices (Greater than 20,000 sq. ft.)**
☐ **Small Offices (20,000 sq. ft. or less)**
☐ **Hospitality** ☐ **Healthcare** ☐ **Public Spaces** ☐ **Store Planning**

Carpet Manufacturer

Style Name

Fiber Brand

Dealer

Mill Contact (Name and phone number)

How did you learn about this competition?

Has this project previously been published?* (If yes, where/when?)

Signature/Date

Social Security Number(s) **This will not affect eligibility.*

I (we) hereby grant permission to DuPont Flooring Systems to reproduce photography of this entry and to use my (our) name(s) in advertising, publicity or sales promotion, including magazine or newspaper articles. Furthermore, I (we) acknowledge that all information contained in this entry is accurate and that the entry will be disqualified if it fails to meet any of the requirements detailed in the entry package.

THE DEADLINE FOR ENTRIES IS JULY 1, 1993

Good luck!

THE 1992 DuPONT ANTRON® DESIGN AWARD STUDENT WINNER

Jeffrey Eyster, Peter Houghton, Washington State University

SENIOR COMMUNITY CENTER

SOUTHWESTERN USA

EXCELLENCE AMONG AMERICA'S FUTURE INTERIOR DESIGNERS AND ARCHITECTS ...

THIS WINNING STUDENT PROJECT is a concept for a community center for the elderly. The premise is for senior citizens to have an impact on their surroundings. Consequently, they will have continued identity and interaction with the community. The idea brings the youth of the community together with senior citizens through a series of specially designed spaces that allow interactive exchange.

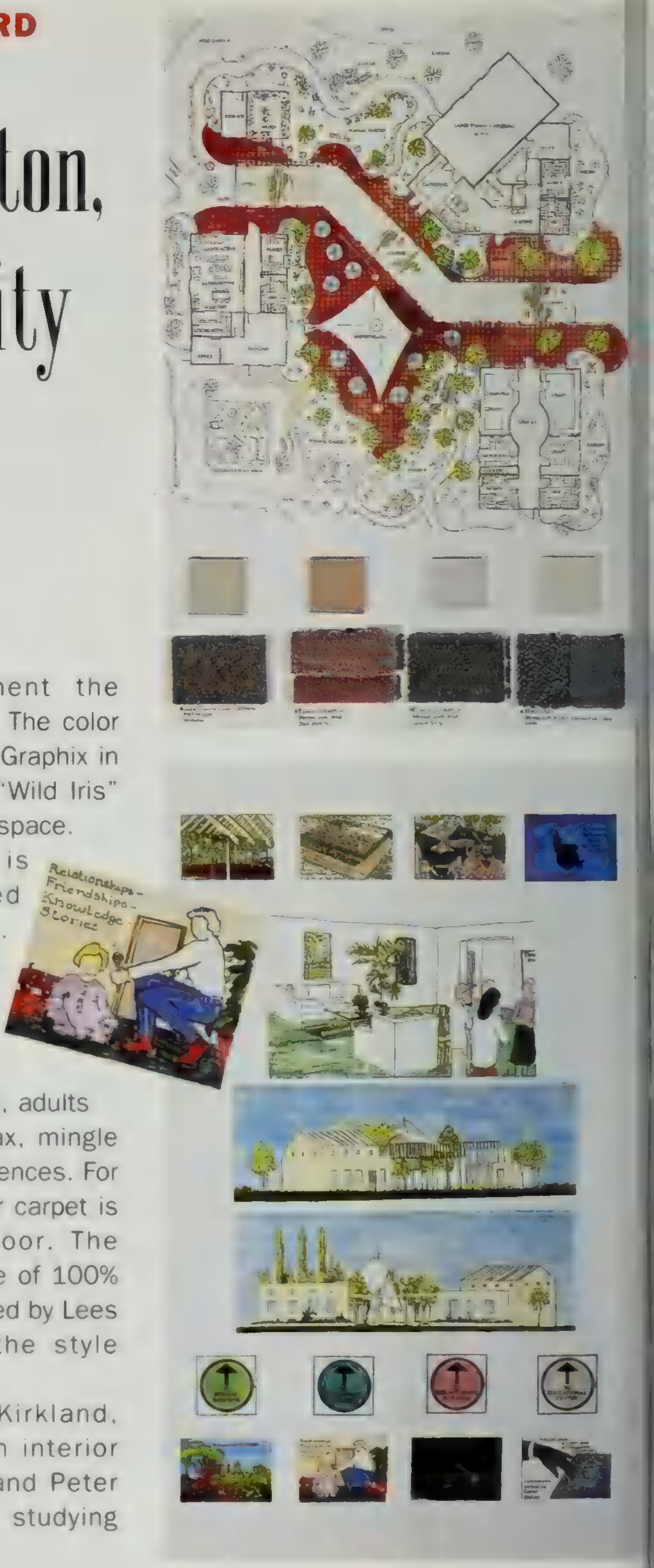
The Educational Center is where young and old share ideas, incorporating computer facilities in which the youth teach the seniors about new technologies, strengthening the bonds between them. A textured-loop and dense pile cut carpet is used here because of its informal and functional attributes. The carpet selected is 100% DuPont ANTRON® manufactured by Hollytex in the style "Lilac."

In the Community Building, dining and day care facilities provide informal settings for interaction. The carpet — of certified DuPont ANTRON® — is specialized to complement the landscape of the Southwest. The color schemes developed by Floor Graphix in the styles "Sea Pearl" and "Wild Iris" provide transitions within the space.

The Formal Garden is maintained by a combined group of elderly and young. Together, they learn about botany, science and nature.

The Philanthropy Building is for communal activities. Children, teenagers, adults and senior citizens can relax, mingle and share their unique experiences. For versatility, dense cut modular carpet is used over a hardwood floor. The designers chose carpet made of 100% DuPont ANTRON® manufactured by Lees Commercial Carpets in the style "Willow."

Jeffrey Eyster, of Kirkland, Washington is majoring in interior design and architecture, and Peter Houghton, from Seattle, is studying architecture.



1992 DESIGN AWARD JURORS

WINNERS OF THE 1992 DUPONT ANTRON® DESIGN AWARD WERE SELECTED BY A DISTINGUISHED PANEL OF INDUSTRY REPRESENTATIVES:

JOEL M. ERGAS, FASID, principal, Forbes-Ergas Design Associates, Inc., New York, director, national ASID
MARK A. KATES, ASID, principal, Mark A. Kates Architects, New York, faculty, New York's Parsons School of Design
TONY F. TORRICE, ASID, the late founder and co-director of Living & Learning Environments, Burlingame, California
NILA R. LEISEROWITZ, ASID, vice president/managing principal, Perkins & Will, Chicago
RITA ST. CLAIR, FASID, president, Rita St. Clair Associates, Inc., Baltimore

ARCHITECTURAL RECORD Editorial

Private Practice vs. The Staff Architect: Time for Reconciliation

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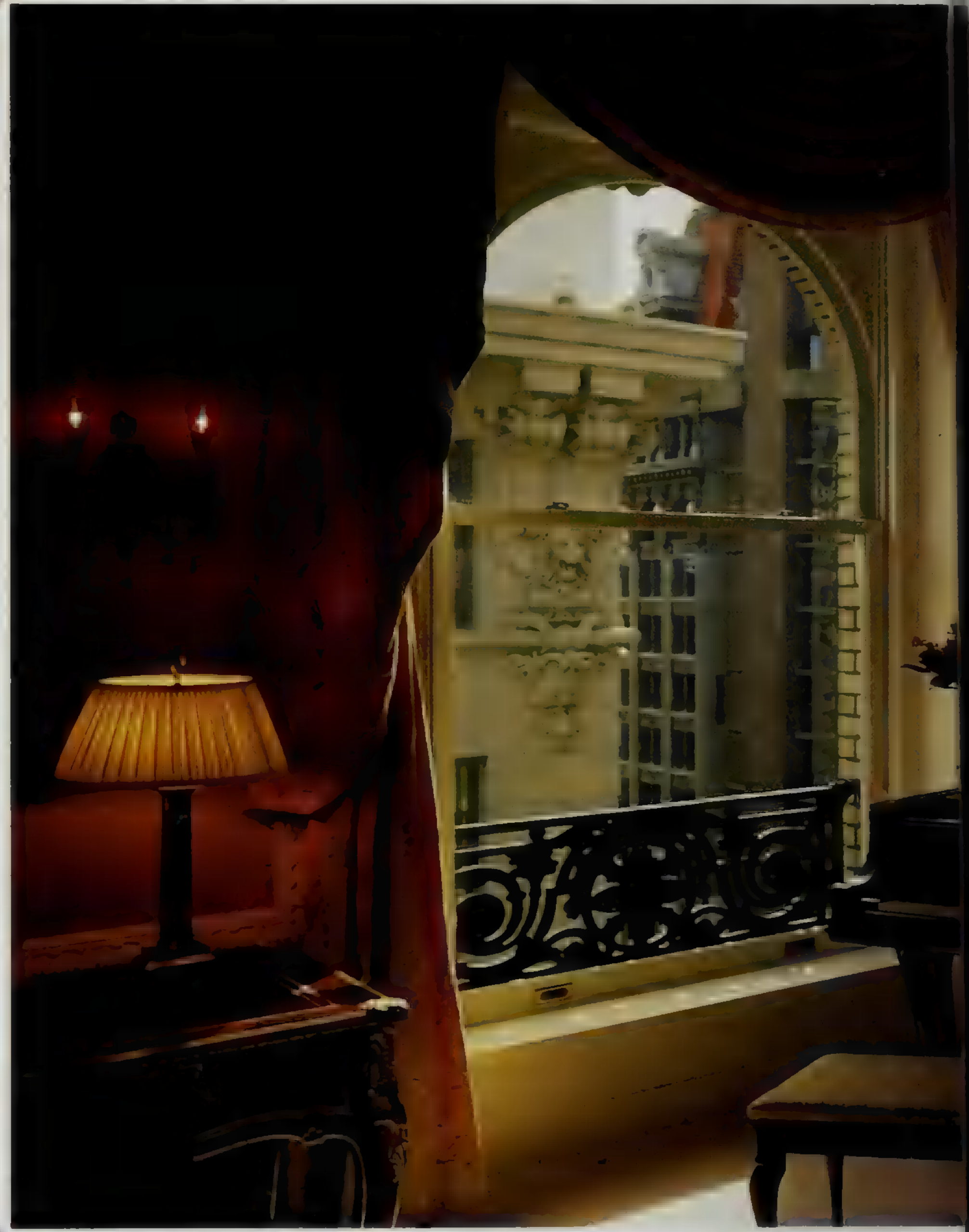
Stephen A. Kliment

IT'S HARD ENOUGH TO GET ONE ROOM AT THIS HISTORIC HOTEL. IMAGINE WHAT



Since 1875, the Sheraton Palace Hotel has been one of San Francisco's most beloved institutions. So when its restoration was being planned in 1989, every effort was made to preserve the details of its original design. Among other things, that meant the replacement of nearly 600 windows. And because of their experience in such projects, Marvin Windows and Doors was chosen. First to receive attention from Marvin and their local distributor were the hotel's graceful curved glass windows, an area in which Marvin's expertise is particularly well known.

No less of a challenge were the hotel's 585 aging double-hungs. Each demanded the same craftsmanship and attention to detail in order to maintain sightlines and replicate the historical profiles of the originals. And to guarantee their durability and consistency, each would have to incorporate the same performance features, too.

So Marvin suggested Magnum Tilt-Pac replacement sash, known for their strength, energy efficiency and economic advantages. And went on to propose glazing them with a special laminated glass to further insulate the rooms from the noise of the busy streets below.

In all, close to 600 windows in over 30 different sizes were designed and built to exacting, historical

OK TO GET ALL 552 OF THEM.

andards. Including some of the largest Tilt-Pac replace-
ent sash ever made. And as the sole supplier, Marvin
s there from initial ordering to final installation to insure
at the whole process went smoothly.

The Sheraton Palace Hotel reopened in April of 1991 after
 months of painstaking restoration work. In part, because the hotel
dered room service for all 552 of its rooms. And Marvin delivered.

MAKE US YOUR FIRST CALL, NOT YOUR LAST RESORT.

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read from and write to DOS, OS/2 and Windows floppy disks, offering compatibility with most existing systems.* It could even have been our built-in networking and file-sharing systems, which let people tap into the same information, helping every one of their projects move quickly through the office. Or maybe, just maybe, Barton Myers Associates chose Macintosh for the same reasons everyone else does. For the power to explore new ideas. The power to chase dreams. The power to be your best.® **MACINTOSH FOR ARCHITECTS.**

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New Barrier-Free Washroom Planning Guide.

Specify Bobrick; the only complete line of washroom accessories that meets the new ADA Accessibility Guidelines. With Bobrick, you're never stranded in ADAAG, risking fines and unhappy clients and patrons. Only Bobrick has the products and the experience to help you comply throughout the washroom.

Soap dispensers, vendors, and toilet compartment hardware need only one hand and less than five pounds of force to operate. Grab bars meet dimension, configuration and strength criteria.

Every accessory has been designed to meet the proper mounting heights, clearances, and functions required by ADAAG.

And your Bobrick Representative is prepared to help with product selection, placement and specifications. In fact, Bobrick has published the industry's most comprehensive Barrier-Free Washroom Planning Guide with the assistance of Ronald L. Mace, FAIA. No professional library is complete without it.

For a complimentary copy, and a Wheelchair Maneuverability Drawing Template, contact Bobrick, 11611 Hart Street, North Hollywood, CA 91605. [illegible] 53-1600, in CA call 818/503-1630. © 1993 Bobrick Washroom Equipment, Inc.

All Bobrick soap dispensers meet ADAAG 5 lbf requirements.

Only Bobrick vendors meet ADAAG operation standards.

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Copper's beauty speaks for itself. But...

HERE'S WHAT BUILDING PROFESSIONALS SAY ABOUT COPPER'S AFFORDABILITY.

Barnett Tower Bank Building
St. Petersburg, Florida
Architect: Jung-Brannen Associates, Boston, Mass.

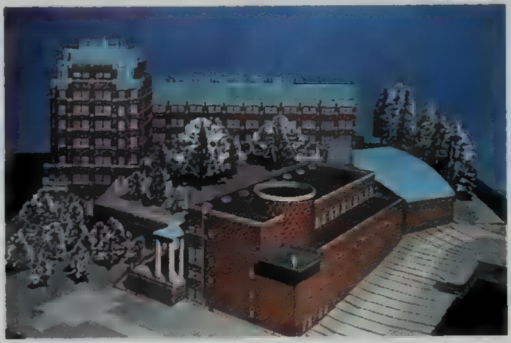
"Copper's classic look was a natural for the clerestory roofs, window mullion cladding and high mansard roof. We also looked at painted aluminum. But since the aluminum offered no cost savings, *copper was the obvious choice for both the architect and owner.*"

—Richard Hometchko, Crockett & Associates
(owners' representative)
St. Petersburg, Florida

Vermont Air National Guard Fire Station and Gate House
Burlington, Vermont
Architect: Northern Architects, Burlington, Vt.

"We chose copper for the curved roofs — not only because of its beauty and durability, but also because *copper was more economical than stainless steel.* Other standing-seam metal roofing materials we considered were ruled out because of projected maintenance costs."

—Steve Smith, Northern Architects
Burlington, Vermont



University of Washington
Physics/Astronomy Building
Seattle, Washington
Architects: Cesar Pelli & Associates,
New Haven, Conn.;
NBBJ, Seattle, Wash.

"We had to choose a siding and roofing material that met aesthetic requirements and represented a good investment of taxpayer dollars. Copper was the natural choice for aesthetics. *A life-cycle cost comparison with painted steel showed copper to be the best buy, as well.*"

—Janet Donelson, Facility Management Office
University of Washington, Seattle, Washington

For design assistance or more information about why beautiful, durable copper is also the best buy for *your* roof, contact the Copper Development Association, 260 Madison Avenue, New York, NY 10016. Or call 1-800-CDA-DATA. In Canada: Canadian Copper and Brass Development Association, 10 Gateway Boulevard, Suite 375, Don Mills, Ontario M3C 3A1. (416) 421-0788.

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CANADIAN COPPER
& BRASS DEVELOPMENT
ASSOCIATION

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ADVERTISEMENT

More Facts On Fire-Rated Glazing...

Having trouble remembering which product is which? Here is a brief summary of the primary characteristics that define each form of glazing.

FireLite

FireLite looks, cuts and feels like regular window glass but will not break when cooled rapidly. Since FireLite is a ceramic, it has an extremely low coefficient of expansion which provides this durable characteristic. In addition, its thickness of only 3/16" allows it to be glazed into standard fire-rated frames. FireLite is approved for use in fire-rated doors, windows, sidelites, transoms and borrowed lite frames. FireLite is listed with Warnock Hersey International (WHI) and Underwriters Laboratories (UL), for 45 minutes in sizes to 3,325 sq. inches, 60 minutes in sizes to 2,721 sq. inches and 3 hours in sizes to 100 sq. inches (as approved by local authorities having jurisdiction).

FireLite Plus

In certain situations, building officials may request a glazing product that offers both a fire rating and an impact safety rating. Just recently introduced, FireLite Plus is fully compliant with ANSI Z97.1 and 16 CFR 1201 (Category I). Clear and wireless, it carries a 60 minute fire-rated listing with UL and fits in standard fire-rated frames. Call Technical Glass Products for the latest details.

WIRE GLASS:

Wire glass has been the traditional choice for fire-rated glazing over the years. The wires can create a more "institutional" look and feel, but for fire-rated locations where aesthetic appearance is not a major concern, wire glass offers an inexpensive option. Listed with both UL and WHI, it carries a 45 minute fire rating for sizes up to 1,296 sq. inches, and meets the safety requirements of ANSI Z97.1, but not 16 CFR 1201.

CONTRAFLAM:

Contraflam has achieved both a fire and a safety rating. It is an insulated glass unit consisting of 2 or 3 layers of tempered glass with a heat absorbing "gel" between layers. The finished glass units may require special framing since this design results in very thick panels (for a 45 minute rating, the unit is 1-5/8" thick). The system can be heavy (approx. 14 lbs. per sq. ft.), expensive, and generally requires special handling. In addition, since each unit must be made to size in Europe, lead time may be 8-10 weeks or longer. During a fire, the gel between the glass lites turns white, obscuring vision but reducing radiant heat.

PYROSWISS:

Pyroswiss is a tempered fire-protective glass from Europe. It has passed the UL and WHI testing for a ***maximum*** of 30 minutes. **Pyroswiss does not meet rating requirements of 45 minutes or longer because it cannot withstand the hose stream testing.** Typically, lead time for custom orders of Pyroswiss is approximately 8-10 weeks (some sizes may require less lead time).

We hope this information is helpful. If you have additional questions on a specific project, feel free to give us a call. We would be happy to help you decide which fire-rated glazing is right for you.

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Fax: 1-800-451-9857

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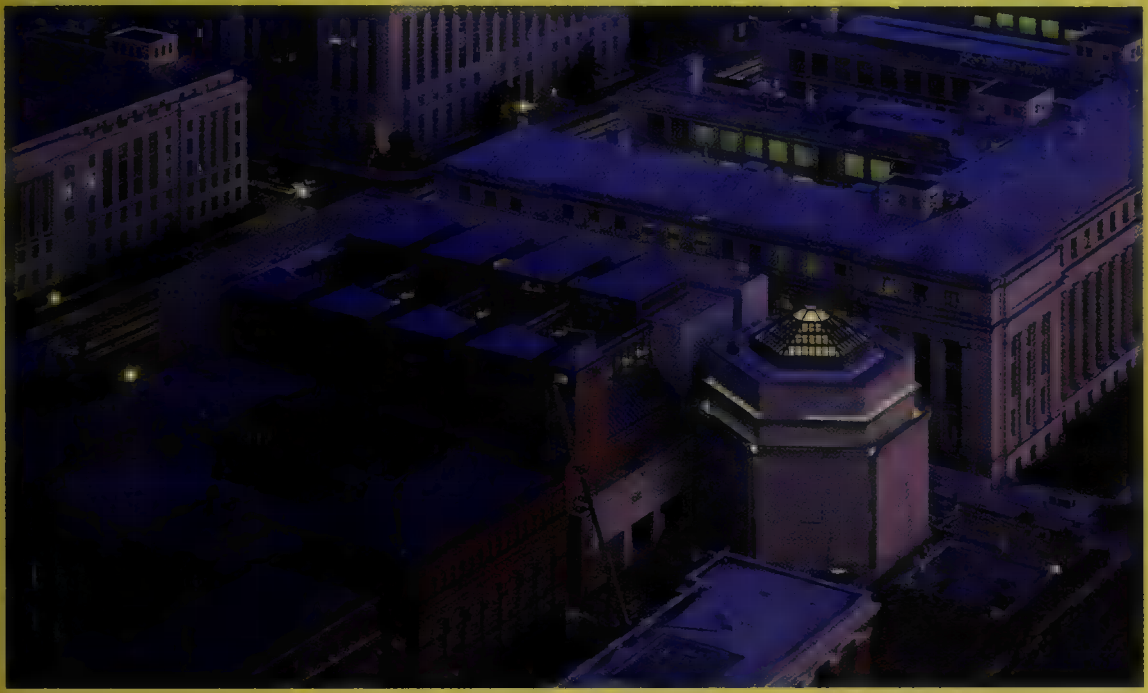
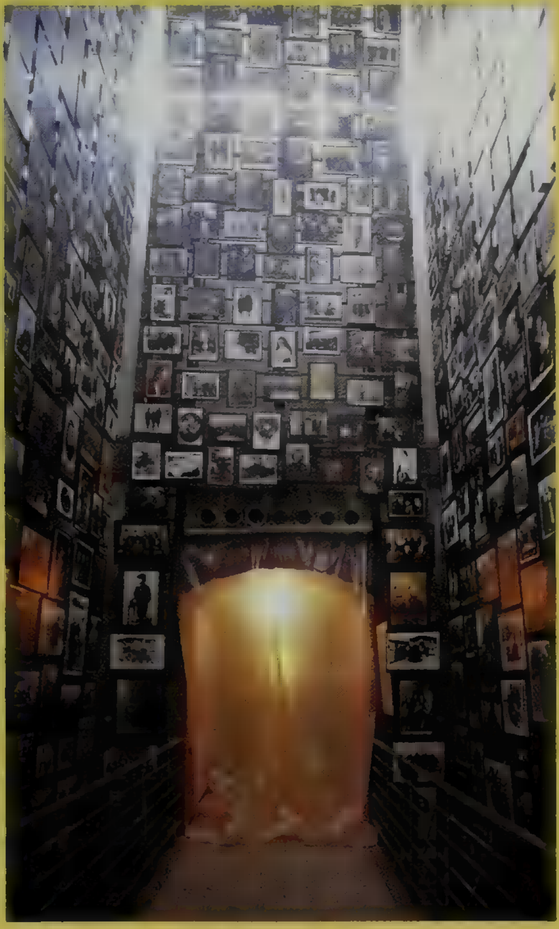
Washington D. C.

U. S. Holocaust Museum Challenges Literal Architectural Interpretations of History





At first glance, the U. S. Holocaust Memorial Museum, designed by Pei Cobb Freed in association with Notter Finegold + Alexander for a site adjacent to the Washington Mall, appears to mirror the built symbols of American democracy that surround it. PCF design partner James Ingo Freed, however, organizes these elements into a cathartic evocation, even without exhibits, of the physically and psychically disturbed world where the Nazis put to death 12-million civilians—Jews, Gypsies, Poles, Communists, blacks, Socialists, homosexuals, dissidents, Jehovah's Witnesses, Russian prisoners of war, handicapped German nationals—whose origins, beliefs, or condition classified them as enemies of the state. Relying more on abstract geometries than literal response, Freed has left the building open to multiple interpretation, because, as he has said, "No two people experienced the Holocaust alike." For instance, the design sandwiches tall blocks faced in red brick—which could be interpreted as industrial progress *or* death machine—between formal facades of limestone worked in a way that evokes both the monumental classicism of the Third Reich's public image and the walled-up ghettos and death camps. The Hall of Witness, a three-story central brick void whose openings recall ovens, warps outside illumination through a diagonally peaked skylight of rhomboids and trapezoids. Four glass-clad footbridges floored with glass block connect the guard tower/libraries above the roof peak; a lower walkway runs through a tower covered with roughly 1,500 photographs set in tile (the Tower of Faces, near left), documenting the pre-war days of the residents of Ejszyszki, an 11th-century settlement near Vilnius, where 99 percent of the population was wiped out by the Nazis. Almost detached from the main structure, the Hall of Remembrance (far left, top and bottom), is a luminous contemplation space with cut-out glimpses of the Jefferson, Washington, and Lincoln memorials. ■

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Chicago

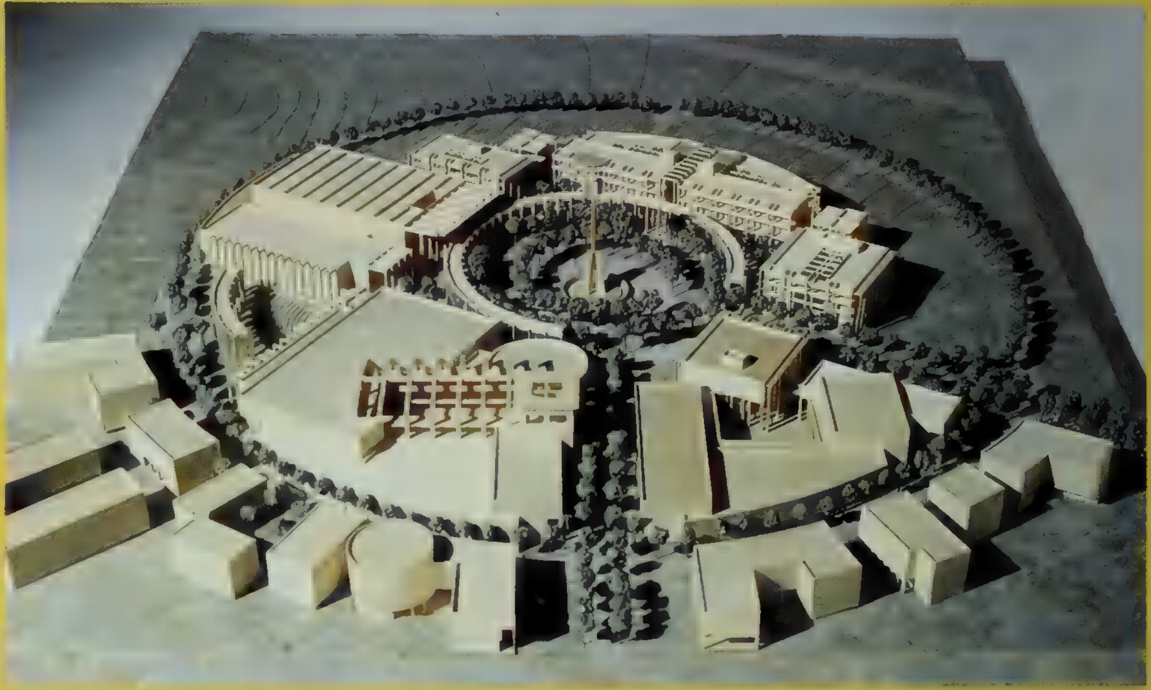
1893 Fair Added to Old Stereotypes

"Grand Illusions" at the Chicago Historical Society critiques the 1893 Columbian Exposition, which gave urban America its grand White-City imagery as well as its racist 19th-century systems of learning-through-comparison that favored elite European culture over blue-collar workers, immigrants, Native Americans, African-Americans, and non-European nationals. The show explores, for example, how cladding the products of U. S. industry and technology in over-scaled Beaux Arts structures (Court of Honor, bottom) created an image of cultural superiority and national unity for a country with an admitted inferiority complex. Under the direction of a Harvard anthropologist, the Midway exhibited non-European people—rather than their achievements—in costume, against a background of primitive or exotic structures, engaged in activities advertised as "savage" (Alaskan Village, below). The Women's Building, whose design exposed 19th-century feminist ambivalence about how autonomous women ought to be, stood at the juncture of "elite" and "savage." The fair was made of plaster and lasted six months; the show runs through July 15, 1994. ■

C.D. Arnold

Zimbabwe

Fast-Track University Is National Symbol



Ground was broken in April for the 500-acre National University of Science and Technology in Bulawayo, designed by Mwamuka, Mercuri, the Bulawayo architecture firm that won the master plan competition, Davis Brody & Associates, New York City, and Tibbalds Monro, London. Designed to play a crucial role in the rapid industrial and technological growth—and international profile—of Zimbabwe, the school will accommodate activities now scattered around the city by 1996, and a full complement of 9,500 students plus 2,000 faculty and staff by 2005. Formal brick, stone, and precast-concrete elements marking the tight academic/administrative core (above) give way to vernacular materials such as stucco as the campus spreads into lower densities and rustic landscapes. Thick walls, lightweight-metal reflective roofs, dense plantings of trees, and shady arcades combine to mitigate intense heat; landscaping will provide a balanced ecosystem to withstand cycles of drought and heavy rainfall. Automobile-intensive facilities such as the National Sports Centre are sited at the campus periphery. ■

California

Monterey Conference Endorses Risk

"Architects are simply not allowing themselves to fantasize about architecture like the public does," Mack B. Scogin told the 11th biennial Monterey Design Conference, organized by the AIA California Council around the theme "Limits/No Limits." The event included architects, a physicist, a critic, and an attorney who called upon architects to design beyond conventional limits and not to assume clients would criticize their ideas. Scogin, a principal at the Atlanta firm of Scogin Elam and Bray and chairman of the Department of Architecture at the Harvard Graduate School of Design, recounted his experiences with clients, and showed slides to indicate that gracious high-ceilinged environments with angular elevations and imaginative floor plans can be delivered on tight budgets. "We have not discovered limits for architecture in a democracy," he said. Pritzker winner Fumihiko Maki (opposite) discussed his treatment of the roof as the "fifth facade." The conference was dedicated to the late architect John K. Miller, senior partner at the Santa Rosa firm, Roland/Miller Associates. *Susannah Temko*

Design

Briefs

National Endowment for the Arts
Richard Meier and Charles Gwathmey are among 35 members of the creative community who have petitioned President Clinton to appoint actress Jane Alexander to head the National Endowment for the Arts. New York City art dealer Richard Feigen claims receiving unsolicited calls daily from people who want a say in choosing what they consider to be their only creative arts and design representative in government.

School Days

- Diane Ghirardo, outspoken critic of male- and white-domination in the profession, becomes president of the Association of Collegiate Schools of Architecture (ACSA) in January 1994. *Aaron Betsky*
- The University of California-San Diego is defunding its year-old architecture school; dean Adèle Naudé Santos reportedly is negotiating to save the school as a research program. *A. B.*

Boycott Divides Community
The AIA board of directors has condemned Colorado's Amendment 2 denying civil-rights protection to homosexuals, but voted 29-9 to proceed with meetings planned in that state, and to pursue "proactive" tactics instead. Observers claim the decision counters AIA Task Force on Diversity recommendations, and the pro-boycott stance of the Organization of Lesbian + Gay Architects and Designers (OLGAD), CACE (AIA chapter directors), and local AIA chapters such as Boston, Louisville, New York, and Seattle.

History Lessons

- The S&L scandal has stripped one of the world's most celebrated interiors from Philadelphia's 1932 PSFS building by Howe & Lescaze. The FDIC has stored the furnishings pending auction; the paneling is in place.
- The scramble to rid East Germany of embarrassing monuments leaves an Alexanderplatz Marx/Lenin statue in place, but demoted by the softening effects of greenery.

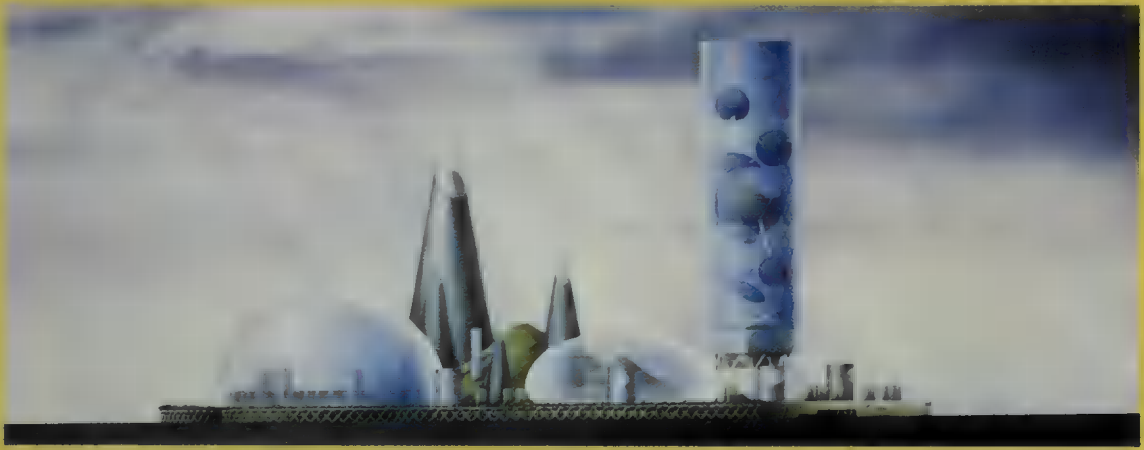
Competitions

- AIA/Cedar Shake & Shingle award deadline is July 9. Write 515 116th Street NE, Bellevue, Wash. 98009; 206/453-1323.
- McGraw-Hill has published a 400-entry *Awards Directory* for the design and construction industries, which costs $125. Contact Intermountain Contractor, P.O. Box 26237, Salt Lake City, Utah 84126-9965, 801/972-4400, Fax: 801/972-8975.

California

Shin Takamatsu Takes Mid-Career Turn Away from Brash Assertion

Atsushi Nakamichi



In "Shin Takamatsu," at San Francisco's Museum of Modern Art, the Kyoto architect's early projects—full of jutting zoomorphic and robotic parts that hold their own amid the intensity of Japanese cities—give way to bigger buildings enveloping geometric elements to fit in with a larger environment, as in "Future Port City" (above). The Takamatsu-designed installation features a cross-shaped walkway elevated over golden stones and flanked by models mounted on mirror-covered bases. *Susannah Temko*

Awards

Fumihiko Maki Wins 1993 Pritzker Prize

The 1993 Pritzker Architecture Prize goes to Fumihiko Maki, a student of Kenzo Tange, the only other Japanese architect to receive the self-styled Nobel in its 14-year history. The award, which consists of a $100,000 grant and a medallion, will be presented by Jay A. Pritzker, president of The Hyatt Foundation, at a June 10 ceremony at Prague Castle in the Czech Republic. In its formal citation, the jury—J. Carter Brown, Giovanni Agnelli, Charles Correa, Frank Gehry, Ada Louise Huxtable, Ricardo Legorreta, Toshio Nakamura, and Lord Rothschild—praised Maki as "an architect whose work is intelligent and artistic in concept and expression, meticulously achieved. He is a Modernist who has fused the best of both eastern and western cultures to create an architecture representing the age-old qualities of his native country while at the same time juxtaposing contemporary construction methods and materials . . . . He uses light in a masterful way, making it as tangible a part of every design as are the walls and roof. In each building, he searches for a way to make transparency, translucency, and opacity exist in total harmony." *K. D. S.*

This Month

Construction Volume First 1993 Update. *Page 30.*
Dodge-Sweet's first update of its 1993 *Outlook* for new contracts continues to predict a slow recovery, led by housing, and describes the Clinton Administration impact on construction, which it predicts will be mostly in the area of lower interest rates.

Part Three in a Series: Construction Administration—What to Look For On-Site. *Page 32.*
A checklist of items by trade type gets the novice started and teaches the seasoned professional new tricks.

Specifications Series: Casements and Draperies. *Page 34.*
One type of fabric window treatment commonly used in commercial installations is explained and outlined in a short-form specification ■

1993 Dodge/Sweet's First Construction Volume Update

By Robert Murray

With the data for 1992 now in, the tenuous nature of the construction industry's first full year of recovery has come into clearer focus. Construction contracting had started the year in bold fashion with surging house-building and public-works activity. But growing consumer unease at midyear took the momentum out of housing, and fiscal constraints at both the federal and state levels removed public works from its expansionary role. Neither housing nor public works witnessed improvement during the fall; meanwhile, nonresidential building continued to erode.

By 1992's fourth quarter, lower interest rates and rebounding consumer confidence enabled single-family housing to once again assume its typical role of leading a construction recovery. The 8-percent gain reported for total construction in 1992 stems mostly from a 22-percent surge in the value of single-family starts, with little support coming from elsewhere.

The potential gains for public works never fully materialized due to budgetary stress, which also took its toll on institutional building. And about the best that could be said for the commercial and industrial market in 1992 was that its rate of decline was not as steep as in recent years. For those whose fortunes were centered on house building, 1992 turned out to be a decent year; for those with an interest in nonresidential building, it was just one more tough year to struggle through.

The other measure of the construction industry, the Commerce Department's index of buildings put in place, exhibited similar behavior in 1992, with a slight lag. Activity reached a peak in the second quarter, slipped back over the summer months, and then regained strength at year's end. The rebound of construction put in place for the year as a whole, at 6 percent, was in keeping with the modest advance shown by construction contracting.

How does this first full year of recovery compare with the first year of recovery in the previous two cycles? Clearly, it was much more subdued—very much in step with the slow-growth 1990s. The 8-percent gain for total construction stands in contrast to a 24-percent gain in 1983, and a 21-percent gain in 1976. One striking comparison is that back in 1976 and 1983 the income-properties group, commercial building and apartments, had completed its decline and was headed back up. This time around, however, this overbuilt sector was still in retreat, sliding an additional 6 percent.

The new administration's impact

In the original *Outlook* forecast for 1993 [RECORD, November 1992, pages 29-34] housing and highways were cited as offering the best potential for near-term expansion. This forecast remains essentially intact, supported by the initial intent of the Clinton economic program.

The recent drop in long-term interest rates, spurred by the Clinton Administration's belief that this will stimulate all businesses, offers the most immediate support to the construction industry. Fixed mortgage rates in March fell to 7.5 percent, a level not reached since the early 1970s. Early 1993 results for single-family housing have yet to show much of a response, due to harsh winter weather and some slippage in consumer confidence. But with strong demographic support still present, single-family housing should bounce back as 1993 proceeds. For the year as a whole, single-family starts are expected to climb to 1,075,000 units, a gain of 12 percent.

While the support for housing might be viewed as an indirect benefit of Administration policies, the $16-billion economic stimulus package would offer a more direct boost to at least public-works construction. With an additional $3 billion devoted to transportation projects, the supplemental appropriation would bring highway construction up to the level authorized in the 1991 transportation legislation. The stimulus package encountered Congressional delay in mid-April, but the highway portion is likely to come through relatively unscathed as this package achieves its final shape. Accordingly, public-works construction is projected to show a 9-percent gain this year. Other sectors of the construction industry derive minimal benefit from the Administration's

Housing and public works remain the major elements of the current slow recovery.

economic package, at least at the state- and local-government level, which has put the gradual upward trend for this type of construction on hold for now. Nevertheless, the level of institutional building in 1993, at 375-million square feet, will be only 7-percent below the most recent peak two years ago.

The overbuilt commercial categories in 1993 continue to face the same problem of high vacancy rates and depressed property values. With the sluggish recovery of the general economy, there has been only a slight reduction in the excess supply of space, even with record-low building levels for offices, hotels, and apartments. Store construction remains the bright spot, drawing support from its typical lagged relationship to the housing market and the shift away from traditional retailing towards discount outlets and specialty stores. Store construction managed a 7-percent gain in square footage last year, and a similar moderate rise is expected in 1993.

Overall, the construction market is projected to show another 8-percent gain in 1993, with single-family housing providing most of the improvement, and secondary support coming from public works. The decline of the commercial building market may have run its course, but any sustained upturn is unlikely for 1993. ■

Prepared April 1993
Robert Murray, Vice President, Economic Affairs
F. W. Dodge Construction Statistics and Forecasts; McGraw-Hill Construction Information Group

1993 National Estimates

Dodge Construction Potentials

First Update April, 1993

		1992 Actual	1993 Forecast	Percent Change 1993/92
Nonresidential Buildings				
Floor Area (millions of sq. ft.)	Office Buildings	85	82	– 4
	Stores and Other Commercial	185	195	+ 5
	Other Commercial	189	188	– 1
	Manufacturing Buildings	93	85	– 9
	Total Commercial and Mfg.	552	550	–
	Educational	145	145	–
	Hospital and Health	76	72	– 5
	Other Nonresidential Buildings	158	158	–
	Total Institutional and Other	379	375	– 1
	TOTAL NONRESIDENTIAL BUILDINGS	931	925	– 1
Contract Value (millions of $)	Office Buildings	$ 11,455	$ 11,300	– 1
	Stores and Other Commercial	11,742	12,650	+ 8
	Other Commercial	9,368	9,625	+ 3
	Manufacturing Buildings	8,317	7,850	– 6
	Total Commercial and Mfg.	$ 40,882	$ 41,425	+ 1
	Educational	$ 16,394	$ 16,825	+ 3
	Hospital and Health	10,781	10,425	– 3
	Other Nonresidential Buildings	18,060	18,375	+ 2
	Total Institutional and Other	$ 45,235	$ 45,625	+ 1
	TOTAL NONRESIDENTIAL BUILDINGS	$ 86,117	$ 87,050	+ 1
Residential Buildings				
Dwelling Units (thous. of units)	Singlefamily Houses	962	1,075	+ 12
	Multifamily Housing	159	175	+ 10
	Total Housekeeping Residential	1,121	1,250	+ 12
Floor Area (millions of sq. ft.)	Singlefamily Houses	1,691	1,910	+ 13
	Multifamily Housing	169	185	+ 9
	Total Residential Buildings	1,860	2,095	+ 13
Contract Value (millions of $)	Singlefamily Houses	$100,516	$115,150	+ 15
	Multifamily Housing	9,899	10,975	+ 11
	Total Residential Buildings	$110,415	$126,125	+ 14
Nonbuilding Construction				
Contract Value (millions of $)	Transportation Construction	$ 31,418	$ 35,200	+ 12
	Environmental Construction	15,587	16,150	+ 4
	Total Public Works	$ 47,005	$ 51,350	+ 9
	Utilities	$ 5,925	$ 6,100	+ 3
	TOTAL NONBUILDING CONSTRUCTION	$ 52,930	$ 57,450	+ 9
All Construction				
Contract Value (millions of $)	**Total Construction**	$249,462	$270,625	+ 8

Regional Estimates chart on next page

First 1993 Update

continued from previous page

1993 Regional Estimates Dodge Construction Potentials

Northeast
CT, ME, MA, NH, NJ, NY, PA, RI, VT

Construction Contract Value (millions of dollars)	1992 Preliminary	1993 Forecast	Percent Change 1993/92		1992 Preliminary	1993 Forecast	Percent Change 1993/92
Nonresidential Building				**Residential Building**			
Commercial and Manufacturing	$ 6,985	$ 6,975	–	Singlefamily Houses	$12,012	$13,400	+ 12
Institutional and Other	9,362	8,950	– 4	Multifamily Houses	2,025	2,150	+ 6
Total	$16,347	$15,925	– 3	**Total**	$14,037	$15,550	+ 11
Nonbuilding Construction	$11,096	$12,100	+ 9	**TOTAL CONSTRUCTION**	$41,480	$43,575	+ 5

North Central
IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, WI

Construction Contract Value (millions of dollars)	1992 Preliminary	1993 Forecast	Percent Change 1993/92		1992 Preliminary	1993 Forecast	Percent Change 1993/92
Nonresidential Building				**Residential Building**			
Commercial and Manufacturing	$ 9,210	$ 9,850	+ 7	Singlefamily Houses	$22,951	$25,650	+ 12
Institutional and Other	10,728	10,500	– 2	Multifamily Housing	2,636	2,900	+ 10
Total	$19,938	$20,350	+ 2	**Total**	$25,587	$28,550	+ 12
Nonbuilding Construction	$11,465	$12,575	+ 10	**TOTAL CONSTRUCTION**	$56,990	$61,475	+ 8

South Atlantic
DE, DC, FL, GA, MD, NC, SC, VA, WV

Construction Contract Value (millions of dollars)	1992 Preliminary	1993 Forecast	Percent Change 1993/92		1992 Preliminary	1993 Forecast	Percent Change 1993/92
Nonresidential Building				**Residential Building**			
Commercial and Manufacturing	$ 7,301	$7,575	+ 4	Singlefamily Houses	$24,360	$29,750	+ 22
Institutional and Other	8,202	8,825	+ 8	Multifamily Housing	1,919	2,450	+ 28
Total	$15,503	$16,400	+ 6	**Total**	$26,279	$32,200	+ 23
Nonbuilding Construction	$ 9,352	$ 9,525	+ 2	**TOTAL CONSTRUCTION**	$51,134	$58,125	+ 14

South Central
AL, AR, KY, LA, MS, OK, TN, TX

Construction Contract Value (millions of dollars)	1992 Preliminary	1993 Forecast	Percent Change 1993/92		1992 Preliminary	1993 Forecast	Percent Change 1993/92
Nonresidential Building				**Residential Building**			
Commercial and Manufacturing	$ 6,298	$ 7,175	+ 14	Singlefamily Houses	$16,197	$19,900	+ 23
Institutional and Other	6,388	7,000	+ 10	Multifamily Housing	762	1,025	+ 35
Total	$12,686	$14,175	+ 12	**Total**	$16,959	$20,925	+ 23
Nonbuilding Construction	$ 8,238	$ 9,200	+ 12	**TOTAL CONSTRUCTION**	$37,883	$44,300	+ 17

West
AK, AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT, WA, WY

Construction Contract Value (millions of dollars)	1992 Preliminary	1993 Forecast	Percent Change 1993/92		1992 Preliminary	1993 Forecast	Percent Change 1993/92
Nonresidential Building				**Residential Building**			
Commercial and Manufacturing	$11,088	$ 9,850	– 11	Singlefamily Houses	$24,996	$26,450	+ 6
Institutional and Other	10,555	10,350	– 2	Multifamily Housing	2,557	2,450	– 4
Total	$21,643	$20,200	– 7	**Total**	$27,553	$28,900	+ 5
Nonbuilding Construction	$12,779	$14,050	+ 10	**TOTAL CONSTRUCTION**	$61,975	$63,150	+ 2

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Part Three: What to Look for On-Site

By Ann Bayard Ketterer

The following are examples of how the observing architect checks for general competency of construction, as well as for conformance with drawings and specifications during the installation of specific materials.

Concrete

Even if an engineer has been hired to observe concrete operations and make required tests, the architect also must look at concrete as part of site observation.

- Make sure that slump and other tests are done at required intervals.
- See that test cylinders are correctly stored.
- Note reinforcing on the site as well as in the work; there should be enough stored on the job to complete subsequent pours without delay.
- Observe location and construction of control, isolation, and construction joints.
- See that concrete color and finishes meet specified requirements.
- Note that curing methods are the ones specified and that temperature-control and moisture-retaining measures are continued throughout the curing process.
- If anything seems irregular, such as extremely wet concrete or concrete poured from an excessive height, question it and notify the engineer.

Masonry

- During the installation of unit masonry, check bond pattern, joint size, and tooling, as well as unit color, size, and other specified characteristics. Look for reinforcing, bond-beam construction, lintel bearing, anchors, flashing, weep holes, and other requirements stated in the construction documents.
- In freezing weather, look for provisions to heat the masonry materials.
- Note if units are wet prior to installation.
- Be sure that required dampproofing has been applied to basement walls prior to backfilling.
- Throughout the masonry work, take note of the location of units that are stacked prior to installation to be sure that they are not stored on floors where they could cause de-

Ms. Ketterer is an architect experienced in project mangement and contract administration.

Part three in a series on construction administration covers what to look for on site.

flection or failure of the permanent structure.

Wood framing

- Check member sizes and spacing, noting anchors, connectors, end-bearing, and other specified requirements.
- Look for temporary as well as permanent bracing and for wood that is sound, straight, and dry.
- Note clearances from chimneys and fireplaces.
- Be sure that framing members are not cut or notched in a manner that would leave them without sufficient strength to carry design loads.
- Check grade markings for compliance with the specifications (see sidebar).
- Be sure that treated wood is used where required and contains stamps or end-tags showing the recommended use, type, and amount of chemicals used, and the standard to which the product complies.
- Look for manufacturer's recommended spacing between units of plywood, oriented-strand board, and other sheathing and decking panels.
- Notice whether lumber is stored off the ground and under cover.

Painting

- Check primers and finish coats for color, coverage, texture, and other requirements of the contract documents.
- See that surfaces to be painted have been properly prepared and are clean and dry. (Waiting 30 days before applying paint to a newly plastered surface may seem to cause delay, but this is an application requirement for many types of paints and primers.)
- Confirm that spaces to be painted are ventilated and are warm enough to meet the minimum application temperatures required by the paint manufacturer.
- Make sure that exterior paint is applied during weather that is not damp or wet.
- Note that windows, floors, and other surfaces are protected from paint spray or other damage, and that personnel in the vicinity of spray guns are wearing approved respirators.
- Look for new, unopened paint cans; labels may show that the brand name, type, and color meet the requirements of the specifications, but if the paint cans are rusty, or have labels with paint drips on them before painting starts, the paint may have been improperly stored, may be contaminated or extremely old, or may be another brand of paint that has been repackaged in a can labeled as the required one.

Drywall

- Observe that the installation technique produces the fewest possible joints, unless, for reasons of strength, more joints are specified.
- If paper surfaces are broken around a nailhead, make sure that an additional nail is driven approximately two inches away.
- Note that double-ply systems are properly nailed and glued and located where required.
- Be sure that ceiling supports are not suspended from pipes, ducts, or other non-structural items.
- If sheets of drywall appear damaged, they should be replaced, limiting patching to only minor errors.
- Test that spaces to be finished are warm enough to meet the minimum application temperatures required.
- Look for corner beads and other accessories.
- See that joint tape and compounds are applied in the specified number of coats with the required drying times between coats.
- Assure that gypsum board is stored in dry, well-ventilated buildings and not brought into the construction area until it is completely closed in and the temperature can be maintained above freezing.

As architects observe each trade to make sure that the materials and workmanship conform with drawings and specifications, they must also watch for related conditions that—although not always specifically covered in the contract documents—influence the quality of the project and its timely completion. By looking carefully at the entire construction process, observing workmanship, attitudes, and management coordination as well as materials and installation, architects can determine whether the project is being built under conditions that promote good workmanship, good construction practices, and adherence to schedule.

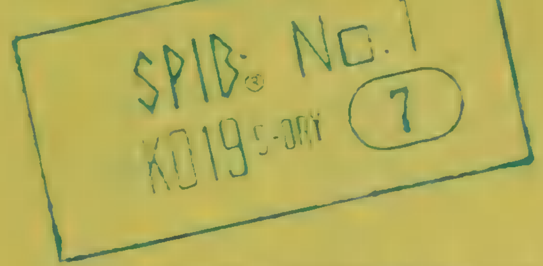
Knowing Lumber Marks

Some master specifications suggest that lumber be specified by stress values. For example, Fb (minimum extreme fiber stress in bending) = 1500 psi, with E (minimum modulus of elasticity) = 1,500,000 psi. If lumber is to be specified by stress value, the architect must determine the correct strengths needed, a species of wood that can provide them, and its ready availablity.

Predimensioned lumber will have grade stamps on it that give a lot of useful information (see below), but only machine-graded, individually tested lumber will actually have the Fb and E marked on the wood. The E and Fb values are shown in a grade stamp that also includes the words "machine-rated" or "MSR" as well as the mill name or number (lower right corner), the species identification, the grading agency trademark, and the moisture content of the wood at the time it was manufactured. Machine-graded wood is also visually inspected before the grade stamp is applied.

The stress values for each species of wood can also be found in reference books such as the supplement to the *National Design Specification* published by the National Forest Products Association. The specifications should state the species, size, grade (upper right on stamp), and moisture content of lumber (lower left) that meet the stress requirements so that compliance can be easily checked.

The grade of lumber will be chosen by stress values, but remember that these values vary for each species and are also determined by size and moisture content within a species. "SPIB" is the logo of the Southern Pine Inspection Bureau, the agency that maintains supervision, testing, and inspection of southern pine. "KD19 S-Dry" shows that the wood has a maximum moisture content of 19 percent. ■



Specification Series: Casements and Draperies

By Maryrose McGowan

Although definitions vary, casements are commonly sheer or semi-sheer and draperies are opaque, pleated, and often lined. Curtains are unconstructed, unlined, and are less usual in commercial applications.

The selection of fabric window treatments is often based purely on appearance. However, you need to know window and glass types, solar orientation, and shading coefficients early in the design process to coordinate them with hvac cooling-load calculations and fenestration design. Make sure the window treatment will not impede hvac functions by blocking vent openings or misdirecting air flow.

Shading coefficient

SC is a value derived from solar-optical properties—transmittance, reflectance, and absorptance—of the window system. Because the effectiveness of an internal shading device depends on its ability to reflect incoming solar radiation back through the fenestration, reflectance is the most important factor in reducing heat gain. The optimum drapery or curtain for reducing heat gain will have high reflectance and low transmittance and absorptance.

Drapery manufacturers may be able to provide values for these properties, although they are seldom asked for such information. The American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc. (ASHRAE) provides a guide for estimating the probable SC of a drapery and glass window system when not available from the manufacturer. Classes are based on drapery openness and reflectance and can be approximated by eye using ASHRAE's guide. Some manufacturers refer to these values as fabric designator.

The openness factor is the ratio of open area between threads to total area of fabric. It is designated by a Roman numeral:
I. Open weave, over 25 percent open.
II. Semi-open weave, 7 to 25 percent open.
III. Closed weave, 0 to 7 percent open.

The yarn reflectance is designated by a subscript:
D. Dark-colored yarn, 0 to 25 percent.
M. Medium-colored yarn, 25 to 50 percent.
L. Light-colored yarn, over 50 percent.

Drapery tops or "headings"

- Pinch pleats or French pleats are traditional for pleated draw draperies and require drycleaning and the most stack space. Stack space at the bottom will be larger than at the top and is estimated by dividing the width of the opening by 3 and adding 12 inches.
- Stack pleats require one-half the stacking space of pinch pleats and allow laundering. Available fullnesses are 60, 80, 100, and 120 percent.
- Roll-pleat draperies (see illustration, opposite page) are fabricated from flat panels which are easily laundered and pressed. Fullnesses are 60, 80, 100, and 120 percent.
- Accordion-fold draperies (illustration, this page), like roll pleats, have the same appearance from both sides. This type requires the least amount of stack space and is available in 80-, 100-, and 120-percent fullnesses.

Drapability

Upholstery fabrics do not usually drape well and fabrics intended for other uses may not be suitably light-resistant. Request or purchase two to three yards of the drapery fabric under consideration and hang it to see how well it drapes. If the fabric must be treated for flammability, check a treated sample. If the fabric requires a lining, hang a lining sample with the draping sample.

Linings protect the fabric from fading and deterioration from ultraviolet exposure.
- Plain-woven linings may have silicone compounds applied to slow the rate of moisture absorption from condensation on the window. Sateen linings are the most popular.
- Metallic-coated lining fabrics increase opacity and solar-heat deflection. Self-lined draperies have vinyl coatings or film sheetings attached to back surfaces.

Weights in the hems of casement and drapery fabrics improve draping qualities and include lead-weight tape or evenly distributed small plastic-coated dead weights can be stitched into place. ■

[illegible] is the specifier for [illegible] Interiors Library and is [illegible] Massachusetts.

Guide Specification
PART 1. GENERAL

1.01 References

A. Standards organizations referenced:
1. American Association of Textile Chemists and Colorists (AATCC).
2. American Society for Testing and Materials (ASTM).
3. National Fire Protection Association (NFPA).

1.02 Submittals

A. Shop Drawings: Show location, drapery style, headings, anchorage details, and location of drapery pulls.
B. Samples
1. Drapery, lining, and interlining material: full width, not less than 36 inches long, showing full pattern repeat, with specified treatments applied.
2. Drapery track, minimum 18-inches long.
3. Bottom- and side-hem intersection (include weights).
C. Maintenance data: dry-cleaning or laundering instructions.

1.03 Quality assurance

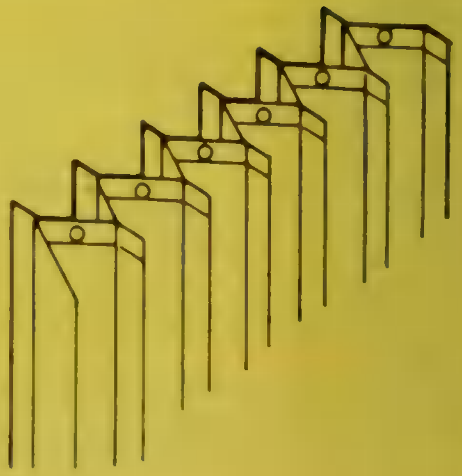
A. Surface burning characteristics: NFPA 701, small-scale vertical burn test.
B. Mock-ups: Erect before ordering fabric.

1.04 Project conditions

A. Field measurements: Verify dimensions to receive draperies before fabrication.

1.05 Maintenance

A. Extra materials: Deliver to owner full-width drapery- and lining-fabric yardage and drapery pulls equal to 5 percent of amount installed.



Benton Brothers System, Inc. drawings

Fabric window treatments include draperies, pleated and roll shades, and vertical louver blinds. Here we cover one segment of common commercial installations.

PART 2. PRODUCTS

2.01 Draperies

A. Fabric:
1. Manufacturer. (Drapery-fabric manufacturer's name, address, local phone number, and name of sales representative.)
2. Pattern. (Manufacturer's style designation.)
3. Color. (Manufacturer's color way designation.)
4. Fiber content. (Fiber content by percentage.)
5. Weight. (Ounces per lineal yard.)
6. Width. (Dimension in inches.)
7. Abrasion resistance: ASTM D1175.
8. Colorfastness. AATCC 16E.
9. Treatment: (Special flammability of stain-resistant treatments if required.)
B. Lining fabric:
1. Manufacturer. (Drapery fabric manufacturer's name, address, local phone number, and, when possible, name of sales representative.)
2. Pattern. (Manufacturer's style designation.)
3. Color. (Manufacturer's color-way designation.)
4. Fiber content. (Fiber content by percentage.)
5. Weight. (Ounces per lineal yard.)
6. Width. (Dimension in inches.)
7. Light tightness. (Black-out.)
C. Valance.
D. Tie backs.

2.02 Drapery hardware:

A. Color: (Important where there is no valance and rod is exposed.)
B. Mount:
1. Wall. 2. Ceiling. 3. Recessed.
C. Operation:
1. Stationary. 2. Baton. 3. Cord.
4. Cord tension pulley. Mount bottom pulley:
a. Wall. b. Baseboard. c. Floor.
5. Motorized:
D. Draw:
1. One-way, stack left.
2. One-way, stack right.
3. Two-way.
4. Center. 5. Fixed side panels.
E. Master carriers:
1. Butt. (Excellent choice for one-way draw.)
2. Overlap.

2.03 Fabrication

A. Heading style:
1. French (pinch) pleat.
a. Fullness: 200, 150, or 100 percent.
2. Stack pleat.
a. Fullness: 60, 80, 100, or 120 percent.
3. Roll pleat.
a. Fullness: 60, 80, 100, or 120 percent.
4. Accordion pleat.
a. Fullness: 80, 100, or 120 percent.
B. Pleat spacing: Comparable fullness to (reference drawing designation and location of drapery that will determine spacing).
C. Draperies: Hang parallel to wall at end of run. Pleats shall hang vertically.
D. Draperies shall be flat to wall at wall returns. Casement and track shall not be exposed to view when draperies and casement are in open position.
E. Thread: mercerized cotton, rayon, or Dacron to be same color as fabric sewn.
F. Needles: no larger than Number 10 for sheer fabrics and Number 15 for medium-weight fabrics.
G. Hems: full double-folded and finished with blind stitch; even and flat with no rack, roll, or wrinkle.
H. Seams shall fall within a pleat fold. Horizontal seams are not acceptable. When half fabric widths are used, place at edge of finished panel or at rod bracket-return.
I. Black-out lining: Needle holes shall not leak light through lining.

PART 3. EXECUTION

3.01 Installation

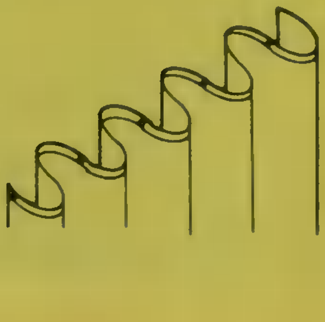
A. Draperies and tracks level and plumb with unencumbered operation of window sash, blind, or shade hardware.

3.02 Adjusting

A. Pinch-pleat draperies hung and tied back for 48 hours to set pleats.

3.03 Drapery schedule

(Add window schedule with treatments).



DRAPERY TERMINOLOGY

Fullness describes the ratio between window-opening width and drapery-fabric width:
- 200-percent fullness is three times the opening width.
- 150 percent is two and half times the width.
- 100 percent is two times the width.

Overlap is the distance the right panel overlaps the left panel when the draperies are closed. Standard overlap is 3 inches for each panel.

Panel is a single drapery unit of one or more fabric widths.

Pleat to is the finished width of the pleated drapery fabric. For example, "pleat to 18 inches" means construct the number of pleats required to reduce the fabric width to 18 inches.

Comparable fullness indicates that the same pleat spacing is required on draperies of different widths. Pleat spacings vary according to opening and drapery-material widths. To achieve a uniform appearance, specify comparable fullness and indicate the drapery that has the desired pleat spacing.

Stack back is the drapery width when fully opened. The stack-back dimension should be added to the window opening dimension to determine the rod length so that access to the window is not restricted.

Return is the distance the rod projects from the wall. Standard return is three inches.

REFERENCE BOOKS

Encyclopedia of Window Fashion (1989) by Charles T. Randall. A reference book of drapery and curtain styles. Contact Randall International at P. O. Box 1656, Orange, California 92668 (714/771-8488).

Window treatments are the subject of this month's Product Literature section.

Accessible Ceiling

Despite downturn, research effort produces innovative commercial ceilings—and new walls as well.

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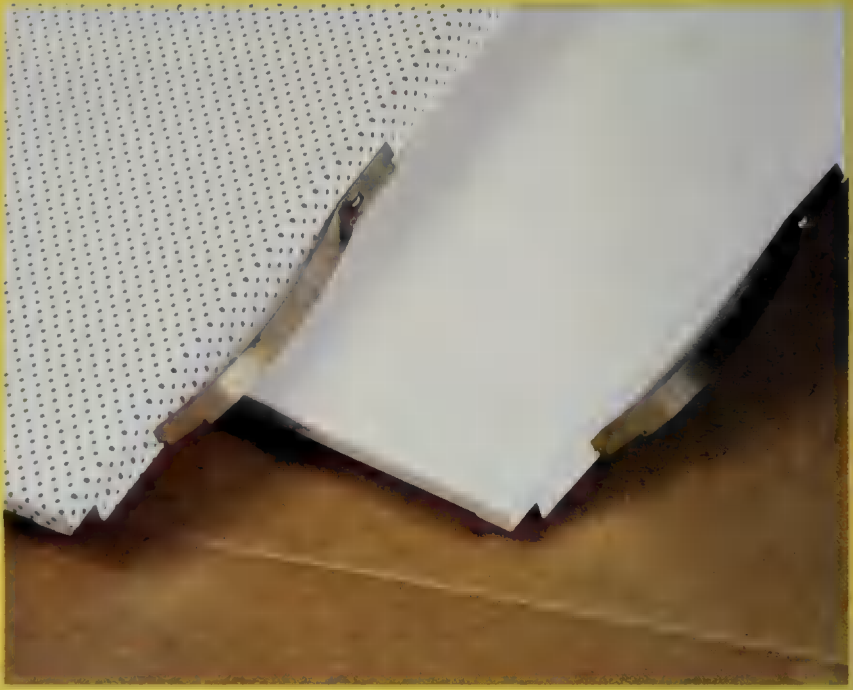

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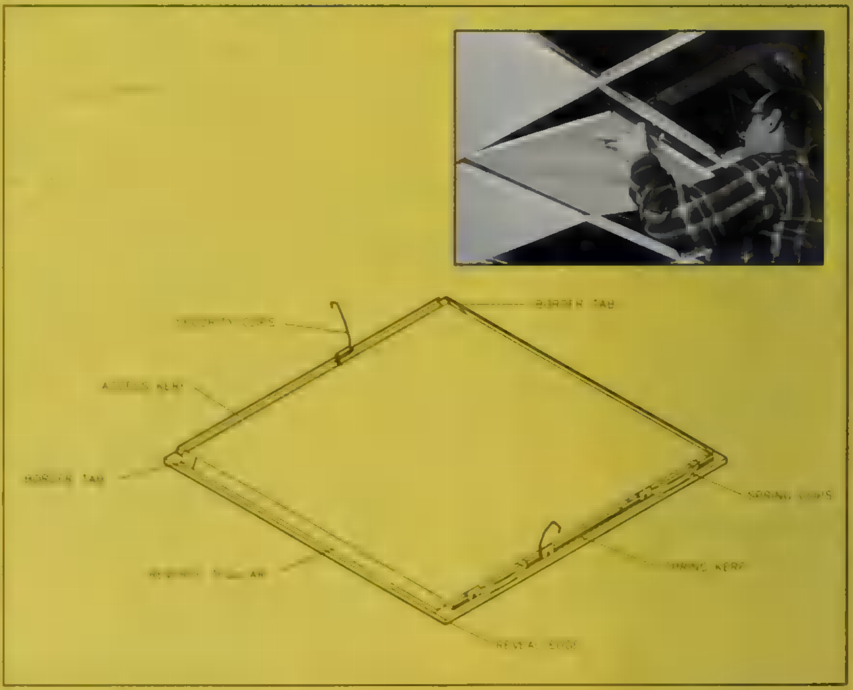

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300. Armstrong World Industries appears to have put these economic hard times to good use, investing R&D dollars into new products and consolidating recent acquisitions such as ceiling-grid systems. To debut at NEOCON, its new walls and ceilings range from tweaks on a classic (new versions for Cirrus acoustic panels) to something completely different for the Cork [illegible] metal ceilings.

[illegible] this aluminum system is [illegible] a monolithic, low-gloss esthetic like drywall, but to be fully removable from below for easy access to plenum space. The 24-in.-square panels have parallel kerfs that fit onto a standard, 15/16-in. tee, creating a subtle, 1/4-in.-wide reveal, and parallel, reverse-tegular edges that maintain the same gap.

Stainless-steel spring clips (3) hold the panel in place laterally, centering it and allowing for tool-free access. Safety hooks (4), which automatically engage the tee as the panels are positioned, prevent individual panels from falling out if inadvertently dislodged. The system is said to be rated for use in Seismic Zone 4. The clean look of the ceiling is helped by its low-gloss finish, in 11 colors as well as the white shown here. Photos (1) and (2) show how special-size Anemostat air diffusers and Viking sprinkler-head covers, painted to match, almost disappear into the ceiling plane. Panels themselves can be either solid and smooth, or perforated and backed by sound-absorbent batts, and installed interchangeably within the ceiling grid. Special trims accommodate perimeter conditions.

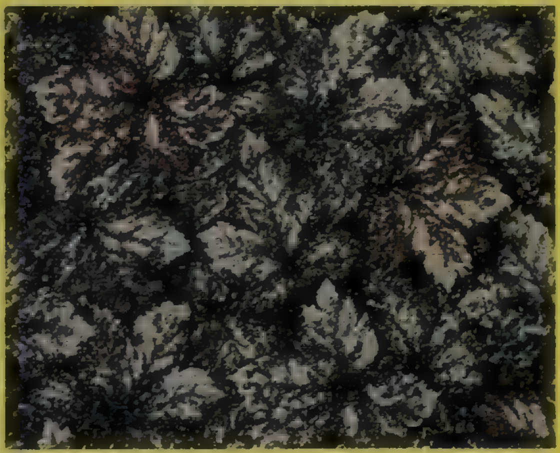
NEOCON '93

For its 25th anniversary (Chicago, June 14-17), the Merchandise Mart contract-furniture event adds the exhibits of a National Commercial Buildings Show to its own 250+ showrooms. From new products previewed, we select three.

301. From the drawing board. Milliken's Commercial Markets division took a hard look at what it had to sell and how it sold it, asking architects, designers, dealers, and end-users for their input on the esthetics, performance, and price of modular carpet. With this feedback, the mill developed over 500 new carpets, refocused its injection-dyeing pattern process, simplified (and lowered) pricing, and expanded its specification program. Pictured is one pattern from the ColorArt series, which includes geometrics, damasks, botanical motifs, and lace effects. A new sample box arranges 40 carpet swatches by color. Milliken Carpet, LaGrange, Ga.

302. Stern goes FR. Contract upholsteries designed by architect Robert A. M. Stern, made of Trevira polyester or a blend of SEF FR modacrylic and nylon, are said to pass the most stringent flame-test protocols without surface treatment. Material can be washed and dried at high temperatures without loss of fire retardancy. The colorful jacquard range includes these damasks, stripes, and curvilinear satin forms and swags. HBF Textiles, Hickory, N. C.

303. A place for everything. Described grandly as a "work process support structure," the Liaison cabinet is a file by another name. It provides desk-top storage away from the desk top, with customizable shelves that hold current work visible and accessible above lateral-file drawers. Units accommodate cable management and power distribution, have a space-saving, compact footprint, and are high enough (up to 68 in.) to provide privacy. Herman Miller, Inc., Zeeland, Mich. ■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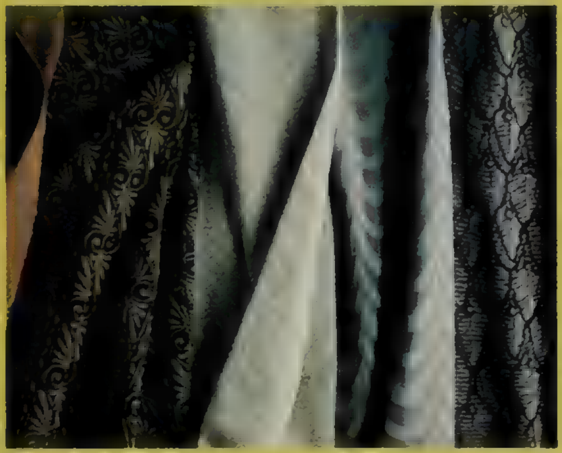
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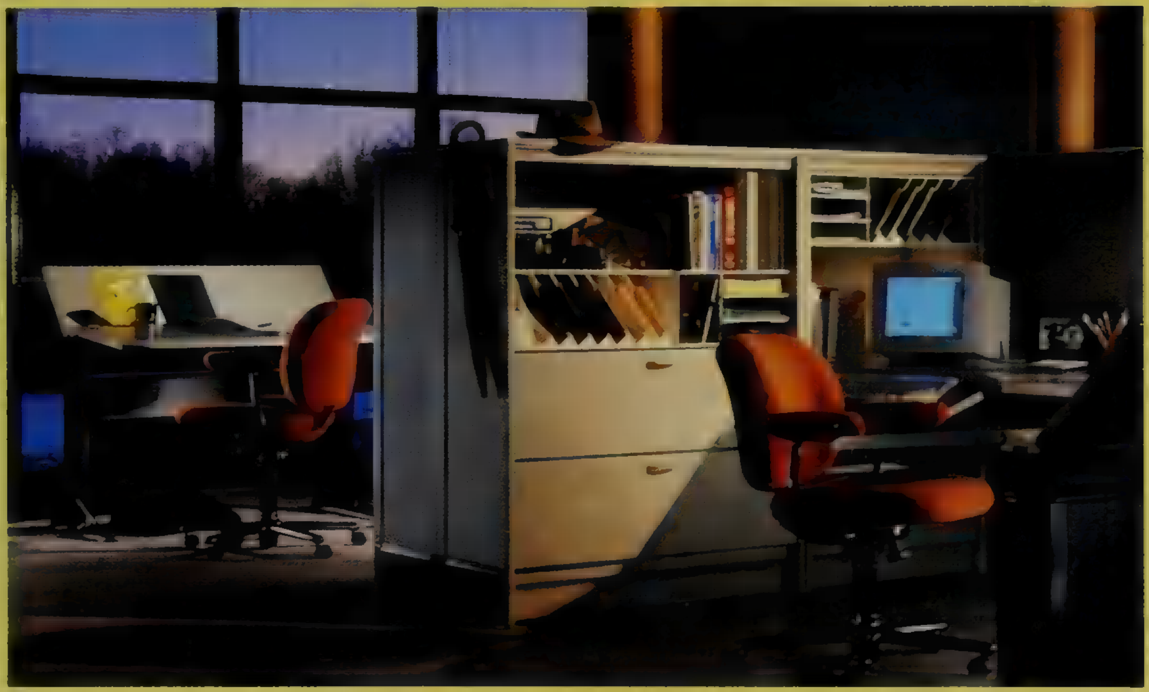
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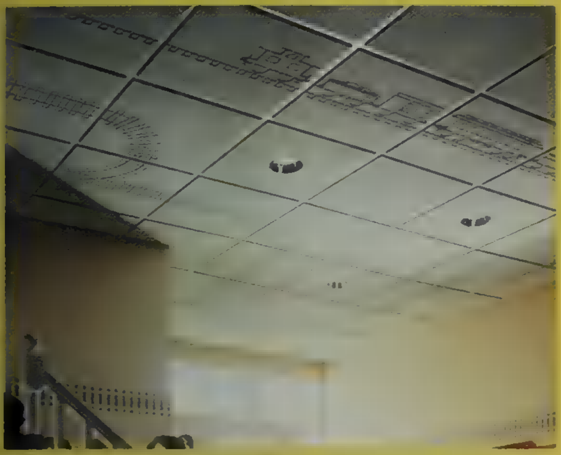
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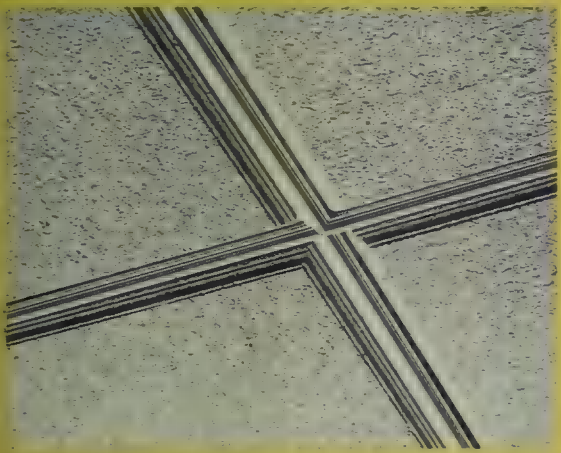
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Above, more introductions. Cirrus Themes (5) are site-paintable designs such as Trains (pictured) and Critters, a baby-bear-paw motif that installs randomly or sequentially to create feature areas or pathways on the ceiling. Woodwinds accessory rails for fabric-covered acoustic panels and other walls include an easel ledge (6), colored inserts, and accent caps. Three-dimensional Definitions tees (7), which coordinate with the panel-edge treatment, are said to transform the grid into an architectural design element. Armstrong World Industries, Lancaster, Pa.

File Viewers

With CAD files getting larger and an increasing proportion of architects using networked personal computers, there's growing interest in file-viewing software—software that allows you to track files, and sometimes redline them, inside or outside your CAD package.

The two offerings we look at this month define the range of products available for AutoCAD Release 12. RxEasyView is a straightforward viewer for AutoCAD files. One version works both inside and apart from AutoCAD; the other works only inside it. Drawing Librarian Professional can be customized to work with other AutoCAD applications such as facilities management. It also allows drawings to be "marked up" for possible modification later inside AutoCAD itself. And it can work with other CAD software, viewing DXF files. ■

RxEasyView V. 1.0

This straightforward package allows you to view AutoCAD DWG (or BAK) or SLD files within AutoCAD Release 12 itself, or (for an extra $100) outside AutoCAD as well. There's full support for viewing Release 11 or 12 files (they are essentially identical), reference (XREF) files, and paperspace. Versions are available for DOS and Windows, and for Sun computers.

The interface looks like it is part of AutoCAD 12, rather than a separate program. You can search for files to view using wildcards or specific directories, select a full-screen display or a "quick view" pop-up window, and view up to 16 drawings at once—great for looking for blocks to insert into an existing drawing.

When used inside AutoCAD, the drawings being viewed can be opened or inserted into existing files, or used as a template for a new drawing. They can also be zoomed and panned. The process is accelerated if you have enough memory, because RxEasyView sets up its own 32-bit display list, separate from any drawing you have on the screen in AutoCAD itself.

The screen for viewing "many files at once" opens 16 views, even if you don't need them all. *Circle number* **304**

RxEasyView V. 1.0 Summary

Equipment required: A computer powerful enough to run AutoCAD Release 12. For the stand-alone version, a slow 386-class PC is adequate. Use DOS 3.3 or higher. Standard-resolution VGA color monitors are adequate, but higher resolutions work better. Requires about 1 MB of disk space.
Vendor: Expert Graphics, 1908 Cliff Valley Way, Suite 2010, Atlanta, Ga. 30329. Phone 404/320-0800, fax 404/315-7645. Pop-up version (for use inside AutoCAD only) is $195; version that can be used either inside or outside AutoCAD is $295.
Manual: Simple and straightforward, 29 pages.
Ease-of-use: Excellent. In fact, you may want to use it to call up files at the start of a session, rather than using the AutoCAD open command. You do that by invoking RxEasyView with the RXEV command.

Follow the installation instructions carefully. RxEasyView communicates with AutoCAD through the ADS interface. You may want to add an environment variable (SET RXEASYVIEW=directory where the directory is the one containing the RxEasyView software) to your AUTOEXEC.BAT file, to assure that AutoCAD can find RxEasyView.

Error messages (for system errors such as a corrupted DWG file) are numerical.

Error-trapping: Unavoidably, RxEasyView uses a lot of memory when viewing lots of drawings, or a few big ones. Make sure you have plenty. ■

RXEasyView gives a "quick-view" pop-up window to insert existing drawing.

Drawing Librarian Professional
1992.12

This file viewer is ideal for those who want to customize an application—perhaps to find AutoCAD DWG, SHX, or DXF files on a network, bring them up for viewing and markup, and then send them to a facilities-management package.

Perhaps the most common application is revision control, tracking myriad changes to a complex set of drawings. Another common application is control of large symbol libraries.

You do most of the customizing inside Drawing Librarian itself, with a built-in script language. The interface itself can be modified for specific tasks such as access to printing commands or switching between local and network drives, or remote redlining—marking up a drawing on a computer connected to you only by modem.

Drawing Librarian allows you to do about anything to a file that AutoCAD can do, except edit. You can redline, print, print to a file, open or merge a drawing, and so forth. It handles the AutoCAD "big fonts" for foreign languages (even Chinese characters), and sends files to a PostScript printer. *Circle number* **305**

Drawing Librarian summary

Equipment required: DOS computers big enough to handle AutoCAD Release 12. This version runs with more VGA color cards than before, but may not work with everything, especially at the outer limits of VGA technology—1024 by 768 resolution and 256 colors.
Vendor: SoftSource, 301 W. Holly St., Bellingham, Wash. 98225, phone 206/676-0999, fax 206/671-1131. Professional costs $500. Standard and Junior versions cost less. Upgrades are as little as $50; site licenses are available as well.
Manuals: Good.
Ease-of-use: Once a system is set up, it can be made to run with just a few keystrokes or mouse clicks. Memory requirements are large, as you might expect.
Error-trapping: Good. It is impossible to corrupt a file. ■

ADAAG Express and ADAAG Reporter

These two programs from Kokomo Software help handle surveys of sites for compliance with the Americans with Disabilities Act Accessibility Guidelines (ADAAG). Express is meant for use with laptop computers on site. It prompts you with yes/no questions and then asks for descriptions of any shortcomings. If you need an explanation, the software normally delivers an on-screen image showing what might be needed—the proper door opening or how to judge a bathroom opening. It also calculates the right number of accessible parking spaces, restaurant seats, and so forth for any situation.

Reporter is arranged so that one person can fill out the ADA Access Board's paper-and-pencil checklist on site, and another can enter the answers into the software back at the office. The software and the checklist are linked with four-digit identification numbers of each possible barrier for the disabled.

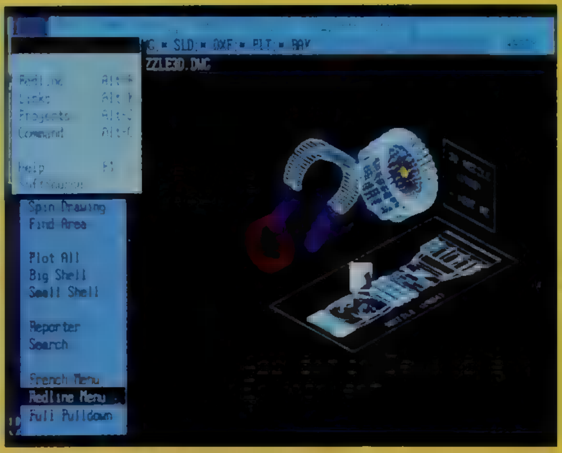
Either package then generates a detailed compliance report that can be saved on disk (and edited with almost all word-processing software) or printed. Your printer must be capable of handling 17 character-per-inch nonproportional type in landscape mode (that is, 11-inch-wide paper with 1-inch margin). The reports are 155 characters wide. Most laser printers will handle it.

You can add detail to the report, such as cost information, contractors, and expected completion dates for modifications.

The software is meant to run on DOS equipment. But the vendor says it is stable enough to run on a Macintosh with DOS emulation. *Circle number* **306**

ADAAG summary

Equipment required: IBM XT or compatible, 640 kilobytes of random-access memory; 3 MB of fixed-disk space; EGA, VGA, or better display.
Vendor: Kokomo Software, Inc., 52 Exchange Place, Salt Lake City, Utah 84111. Phone 801/531-1122, fax 801/531-1211. Each package is $399, but the two together are $598 (second packages to the same office are $199, and the titles can be mixed for the discount).
Manual: A simple, 25-pager for Express, and 10-pager (plus the 100-page Architectural & Transportation Barriers Compliance Board checklist) for Reporter. The material is meant mainly to teach the survey process, not to teach the software—which is easy to use.
Ease-of-Use: The trick is to divide the survey job into sections—site exterior, site interior, and primary function (restaurant, library, whatever), then fill out each on-screen checklist in turn when using Express. Otherwise, you have to prowl the entire facility and depend on your memory (or go back) to describe shortcomings.
Error-trapping: It's possible to enter a file name that may not be "legal" in DOS—one with reserved characters such as question marks. To save data on a laptop, use the "resume" function to keep everything in memory even if power is turned off. ■



Drawing Librarian Professional is ideal for the architect who needs to keep track of numerous changes on a complex set of drawings. It also handles large symbol libraries with ease.

A Conversation with Ada Louise Huxtable Part II

"I still feel this tremendous cult [among some architects] for the world of Disney, this tremendous cult for 'they know how to do it . . . how superbly they plan, how architecture can learn from all this . . .' I don't believe a word of it."

By Robert Campbell

Contributing editor Robert Campbell talked recently with Ada Louise Huxtable, author and former architecture critic for The New York Times. *Part I of the interview appeared in last month's* RECORD. *In this final installment, Huxtable talks about her own background, "themed" environments, and today's pluralistic culture.*

Values and background

Robert Campbell: Looking back through history, what are the buildings that mean the most to you?

Ada Louise Huxtable: I want to answer your question in a different way, because I think it's what makes me whatever I am—that I didn't start out thinking in terms of monuments, that I started out loving city streets. I started out loving what somebody has called "everyday masterpieces." I started out adoring the discovery of certain kinds of buildings that weren't well known, that were part of a streetscape that created an ambiance, that created the character of a city, a sense of its history and its style. This is what I have always loved. I have not been a great lover of monument buildings. I do not mimimize them in any way. But nobody can understand architecture who only appreciates great monuments.

RC: I remember in your book on the Greek Revival there's a photograph of a little converted house, with a shop on the ground floor, and you wrote about the meaning of that small fragment of the city. That's what I remember best from 30 years ago.

ALH: That's nice; that's exactly what I would have hoped would happen. It was a totally unconventional approach to architecture and architectural history at the time I started. It's become something understood and valued since, I think, although much of the conservation movement still has trouble with things that can't be "certified."

RC: The one thing everyone says about you is that your writing is unforgettable. You seem to be so sure of what you think. The writing carries such a sense of conviction that it becomes aphoristic. Are your opinions easily arrived at?

ALH: Let's go back to being sure of what you think. You are sure of what you think if you do your homework. I was trained as a researcher, as an architectural historian. I want to know everything about whatever the thing is I'm tackling. I want to know it from every point of view. That isn't always easy on a weekly deadline. It means you work terribly hard.

RC: I think critics who come out of an art-history background sometimes make the mistake of thinking architects have the same kind of authorial power over their work that painters do. Whereas authorship in architecture is a lot more complicated.

ALH: And they look at it with a pictorial eye. I married an industrial designer who was often working with architects. The first job that I remember him being on was the United Nations, when that was being built in New York. So from my earliest professional experiences I was involved with architects and I was watching structure. I was aware from the very beginning how much extra steel, for example, was going into the U. N. while the architects were making up their minds about what they were going to do. For a while I got *Engineering News-Record*, which fascinated me and still does. It gave the structural story behind the buildings. Often the structure was so arbitrary it was unreal. It was so revealing. It's one of the things that made me realize what's gone wrong in Postmodernism and much architecture today. I would read there the story of how some design was tossed at the engineers and what a time the engineers had making this building stand up, making it look the way the architect wanted it to. And afterwards, that building would always look to me like a building where the architect hadn't started out with what I would call the gut glory of the structure. Instead you felt that this is a piece of sham. You can't read the engineering. All you can read is this fancy dress design.

RC: Who else have you been influenced by?

ALH: Lewis Mumford. He influenced my whole generation, of course. A great mind and a great man. No matter how he's belittled by psychobiography and no matter what his personal affairs were, he still had a vision, and he still had standards, and he wrote beautifully. He got there first with everything, and with a power of expression. I remember reading those early books, *Sticks and Stones, The Brown Decades*, and having my eyes opened on every page. It was

when he got very high up in his pulpit that he lost me. But when you go back and read *The New Yorker* pieces or the RECORD pieces, they are terrific.

RC: Jane Jacobs was a big influence on me.

ALH: I was already there [thinking along the same lines].

RC: Who else?

ALH: I didn't admire anybody very much. I thought most people were on the wrong track most of my life. I still do. I love writing. I admire literary style. I think as a stylist I still revere E. B. White. I don't think anyone has surpassed his writing. I hate fancy writing. I hate involved writing. I hate people who can't figure out a way to say what they mean. Whether it's literary infelicity or issue-straddling or intellectual dishonesty, I hate it.

RC: I think difficult academic writing is almost always the result of the author simply not having thought through fully what he or she is trying to express. Wittgenstein, you know, said that anything that can be thought about can be clearly expressed.

ALH: Thank you, Herr Wittgenstein! I sincerely believe that. When you have to translate somebody's obscure stuff for the

© *Luca Vignelli photos*

public, and you begin to break it down and analyze it and put it into English, you discover that if it's a worthwhile thought it could have been expressed much more directly and more beautifully. If it breaks down into nothing, then you know that it is nothing. Knowing what you're saying is the basis of all good writing. What else did Wittgenstein say?

RC: The other half is he thought there are many things that cannot be thought about.

ALH: Of course.

The person

RC: Let's talk about yourself a little. We're now sitting in your penthouse apartment. Maybe you could describe it a little.

ALH: It's the accumulation of a lifetime. It's much too much stuff, and you begin to feel a little smothered in that you have to edit constantly to keep order. But it is a lifetime of marriage and work and travel, of inheritance. My late husband Garth designed the coffee tables, those cubes, the candelabra. He designed the buffet on our 25th anniversary, to go with the already-old [Bruno] Mathsson table and Artek chairs. We loved Tiffany glass when nobody collected it—or we wouldn't have all this, considering where the prices went. People would say, "What do you want that oily-looking stuff for?" We bought the simplest, which is not considered the highest collectible form, but we liked simplicity.

RC: You both were Modernists, yet you collected Tiffany?

ALH: I think that unless you have a stunted sense of beauty or a constipated sense of design you don't close your eyes to beautiful things whenever they were done. You can have a personal preference. It took me years to deal with Rococo and Baroque, and once I could deal with it, I loved it. But I knew that I couldn't deal with it in strong doses. So we all have our personal preferences. Simplicity is generally rewarding. Simplicity and quality. That sounds very stuffy.

RC: You also live in Marblehead [Mass.].

ALH: It was very funny, when Garth and I looked for a house after I left the *Times*, the real estate agent kept showing us historic houses. And my husband kept saying, "I'm too old to fix up a house for somebody else." Finally, someone had the wit to show us a little ranch house which required no care at all and was just waiting to have somebody say, "Give me whatever character you want!" I love the house. I think it's got a marvelous little plan. I think the planning in some of those ranch houses was truly wonderful. It's a narrow house, which is very traditional planning by the water. The breezes go right through and it has lots of usable spaces you can do exactly what you want with.

RC: How did you get interested in architecture?

ALH: I was that special New York thing—I don't think it exists anywhere else—the child as loner. The child as loner, taking advantage of everything that the city has to offer, and being very content and very happy in that aloneness. I grew up in a Beaux-Arts building on 89th street and Central Park West, the St. Urbain. It was a different city, it was a safer city. As a very young person I was allowed to go across town to the Metropolitan Museum. Everything was free. To a young person of intense curiosity who loved all these things, it was all there and it was all available. It never occurred to me that there were people who didn't have it, who didn't grow up this way. Then when my friends went off to Ivy League colleges and I went to Hunter College in New York, I felt deprived because they were all away at these beautiful colleges. But in the meantime I was getting an education that, in retrospect, was so magnificent. It was a splendid classroom education. But it was *being in New York* that was the education. It started when I was young and just accelerated as I got older.

Themed entertainment

RC: What are you writing now?

ALH: I did an article in the *New York Review of Books*, which they called "The Unreal America," and which I had originally called "Inventing Reality: Variations on Architectural Themes." It is now in the process of becoming a book. It deals with the issue of the environment—how much we are willing to appreciate and live with and build on what we have, what we have created in cities, what we have created in architecture, and how much we want to discard that for a fantasy environment based on entertainment and consumerism. My concern has been how that issue has infected architecture and has created some of the frivolity—frivolity versus genuine joy, [instead of] the kind of pleasure that architecture can give. I think this has falsely infected architecture. Architecture can give a deeper and more important kind of joy that engages the real world. And that's eventually, I suppose, what the book will dwell on.

RC: In that article, you spoke of what you called "themed entertainment" or "the reinvention of the environment as themed entertainment." What did you mean by that?

ALH: I can't analyze historically or philosophically, why—particularly in the American public—there has been an increasing reluctance to deal with what I'd call reality—in other words, the real physical world. Why we prefer to invent environments. Whether it is a result of disliking our lives and our worlds enough to make us want to dwell in fantasy worlds. And we have people who obligingly provide them—some of the preservationists, the Disney Company. I don't know whether that is it, or whether it's just that it's such a well-marketed product and we're in a consumer society, and entertainment is number one.

RC: I'm not so sure people really go to Disney World because they prefer simulation.

What people want to do at Disney World is get behind the scenes. And getting behind the scenes is moving from the world of simulation to a world where real work is being done—even though that work is the work of simulation. The last theme park they opened at Disney World is the MGM Studios, where the whole point is to get you behind the scenes. So now what was the work of simulation has become the simulation of the work of simulation—so I guess we'll have to go another step.

ALH: That's marvelous. But I still feel this tremendous cult for the world of Disney, this tremendous cult for "they know how to do it and we don't know how to do it, how superbly they plan, how magnificent their technology is, how architecture can learn from all this." I still feel this much too strongly among architects.

RC: Do you believe a word of it? I don't.

ALH: I don't believe a word of it, but I think they believe it or they're so lost they don't know what to believe.

RC: Well, Disney is the big client in the world today. Maybe it's as simple as that.

ALH: That's the answer, of course. It's a form of rationalization.

RC: A lot of people worry that the whole world is merging into one culture and architecture will look the same everywhere. People as different as Kenneth Frampton and the Aga Khan express this. Is it important to preserve difference? How can you do that without embalming particular styles? Does my city have to become Bostonland to save itself from becoming Everyland?

ALH: I think what you're saying is, "Does it have to become Developerland?" It really doesn't have a lot to do with architecture and with regionalism and with style. It's a matter of economics. It's the client, again. Don't you think so?

RC: But why would clients want the whole world to look alike?

ALH: Because they know what sells, and they set very rigid limits on where they'll build, how they'll build, what they'll build.

RC: Aren't they responding to the fact of a homogeneous world culture emerging?

ALH: I don't think they're the least bit concerned about that. I think they're concerned mainly with the bottom line, and with what [illegible] "signature architects"—[illegible] can sell—which has nothing to do with the quality of the product. It has very little to do with these larger questions.

RC: OK, but if you agree with me that somehow difference is of the essence of what the world ought to have or be . . .

ALH: It is.

RC: Then it's a kind of architectural Second Law of Thermodynamics that's going on, a decline from difference to sameness throughout the world. Given that you think it's profit-driven, what do you do about it?

ALH: I don't know. I have my own little narrow channel of attack on this, which is consciousness-raising. I do find that about the only thing that works in this world—when money doesn't work—is public opinion. That can have some surprising effects if it gets strong enough.

RC: In the same article, you also talk about the catch-phrase "authentic reproduction." You point out that it's really an oxymoron.

ALH: It's the expression I think I hate more than any other. Not just because I dislike sham in everything, including language. But because there's just something so un-nice about the idea of selling something fake in terms of something real. How can you have an authentic reproduction? Reproduction is a copy, authentic is real. A real copy? Well, yes, a lot of philosophy has been written about that—Eco, and Baudrillard, who says that the simulation has become the real thing. But I quarrel with this. I think we've lost the real thing. And I think in losing authenticity—you notice we never use the word artificial any more, with its pejorative connotations—I think we've lost something terribly important. If we value true mastery, we've got to make a distinction between the authentic and the inauthentic. We have to realize that anything like authentic reproduction is really an obscenity.

RC: These things ingrain themselves in the culture. It hadn't occurred to me it was an absurd phrase until I heard it from you.

ALH: This is all part of the culture now. I think if I have any battle, any thing I'm fighting as I used to fight the fires on the street corners of New York, it is probably this, because I think it is really so destructive of real architecture and real environmment.

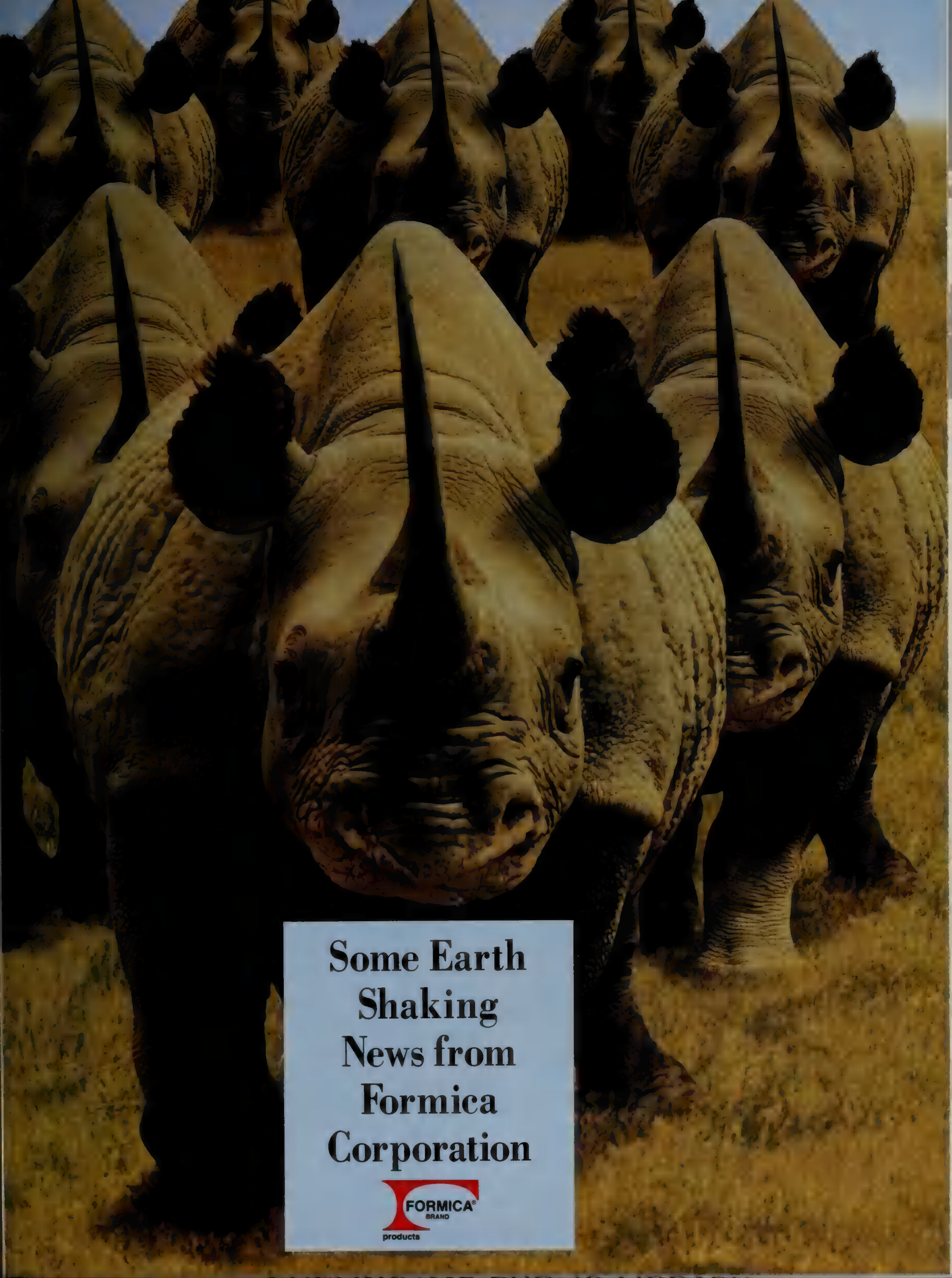
RC: It's hard to know what "authentic" means sometimes. I had an experience years ago, arriving in Marrakesh, and I thought "I'm out of the loop now, maybe I'm going to have an unmediated experience, an experience of unmediated culture." But then as the Air Morocco plane taxied to a stop, the intercom began playing Herb Alpert and the Tijuana Brass, and in the famous main square the snake charmers were wearing Adidas running shoes.

ALH: I love it.

RC: Me too, but I had two thoughts. First: "Why can't they be more authentic?" And then, of course: "In asking them to be authentic, I'm asking them to be inauthentic."

ALH: I think that one of the marvelous, delicious, and joyful parts of our time is this curious ironic complexity of our culture. I love it. It keeps me alive and at attention and amused and interested and entertained. I think this is what is legitimate, what is authentic. It's not simple. This is a deep culture, a marvelously ironic culture, a culture that has come out of so many aspects of our times that I think a lot of people are beyond understanding it. That is the complexity of our culture now, the way one thing rubs against another and sets off all kinds of sparks and reactions. That's a very rich experience. ■

"I hate people who can't figure out a way to say what they mean."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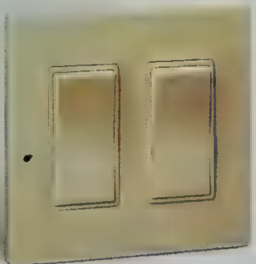

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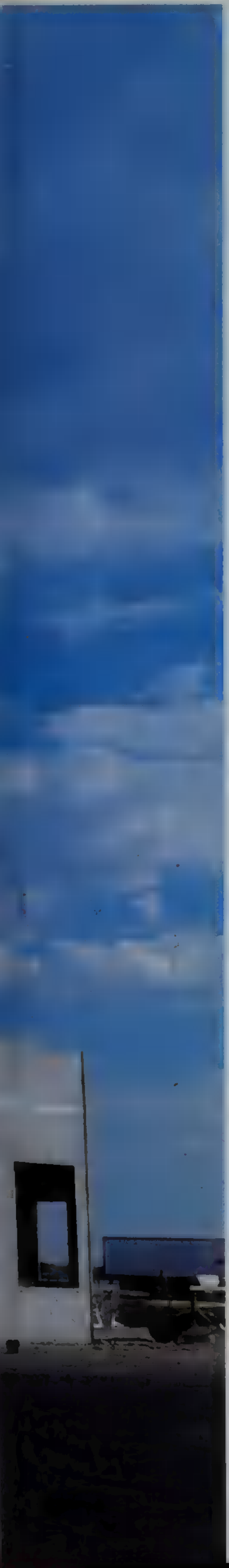

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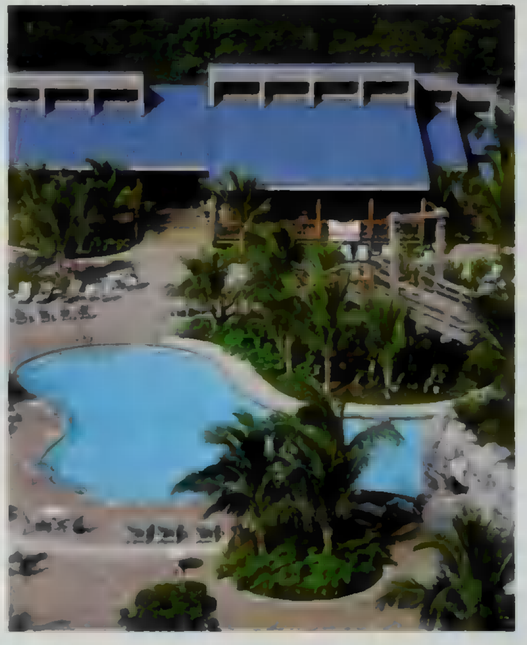

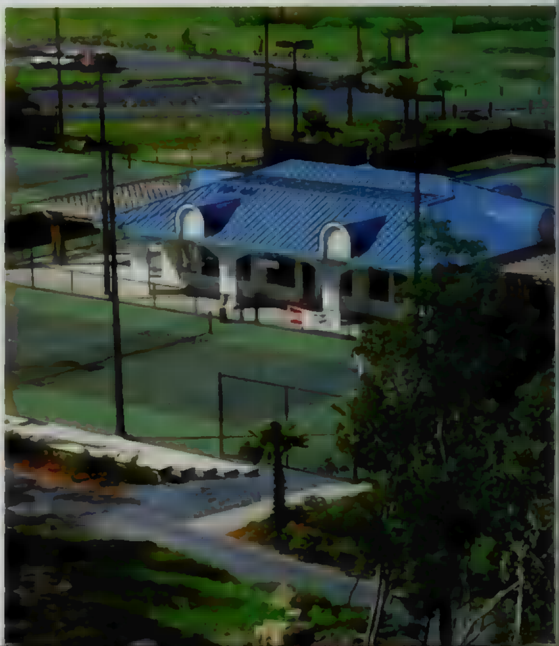

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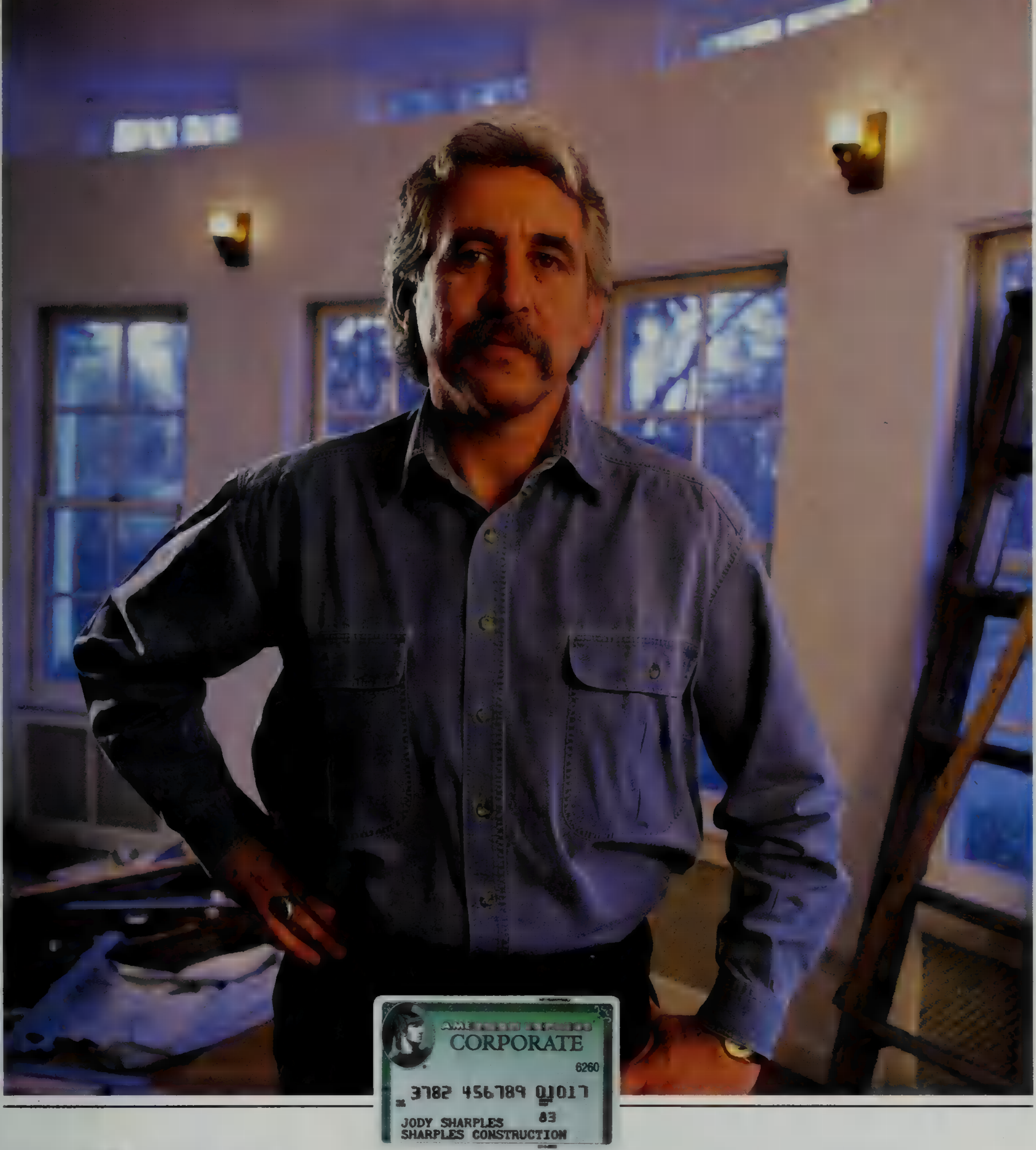

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In This Issue

Architecture has to work harder than ever to establish its value, carve out its niche. This issue shows that resourcefulness is not a lost art. Our increasingly turbulent world intruded on the design of Perry Dean Rogers & Partners' U. S. Embassy in Amman, Jordan, in the form of strict new security requirements (page 66). The firm's response seeks to reconcile security with diplomatic welcome. Another sign of the times: the demand for detention facilities continues to rise. Our *Building Types Study 705/Correctional Facilities* (page 94) documents some of the thinking (above all a recognition of the increasingly diverse inmate population) that may improve management and reduce construction and operating costs. Architecture's place in Graham Gund's Fernbank Museum in Atlanta is more clearcut: its Great Hall is a suitably civic setting for a variety of meetings and celebrations (page 80). In contrast to the playful monumentalism of Gund, the wedge-shaped cornice of a skyscraper by Kohn Pedersen Fox stabs the sky (page 74). Unabashedly modern, the carefully calibrated massing of this complex for Marathon/IBM draws together Montreal's heterogenous skyline. Unsettled times propel some architects on a search for what is truly essential. The Russian translation of *Polinya,* for which Toyo Ito's Hotel P was named (page 88), aptly describes the image in the architect's mind: "the middle of a white glacier where a pool of unfrozen water remains." *J. S. R.*

Manufacturers' Sources listed on page 117

Ambivalent Symbol

With security concerns paramount, Perry Dean Rogers's embassy in Amman reflects an increasingly turbulent world.

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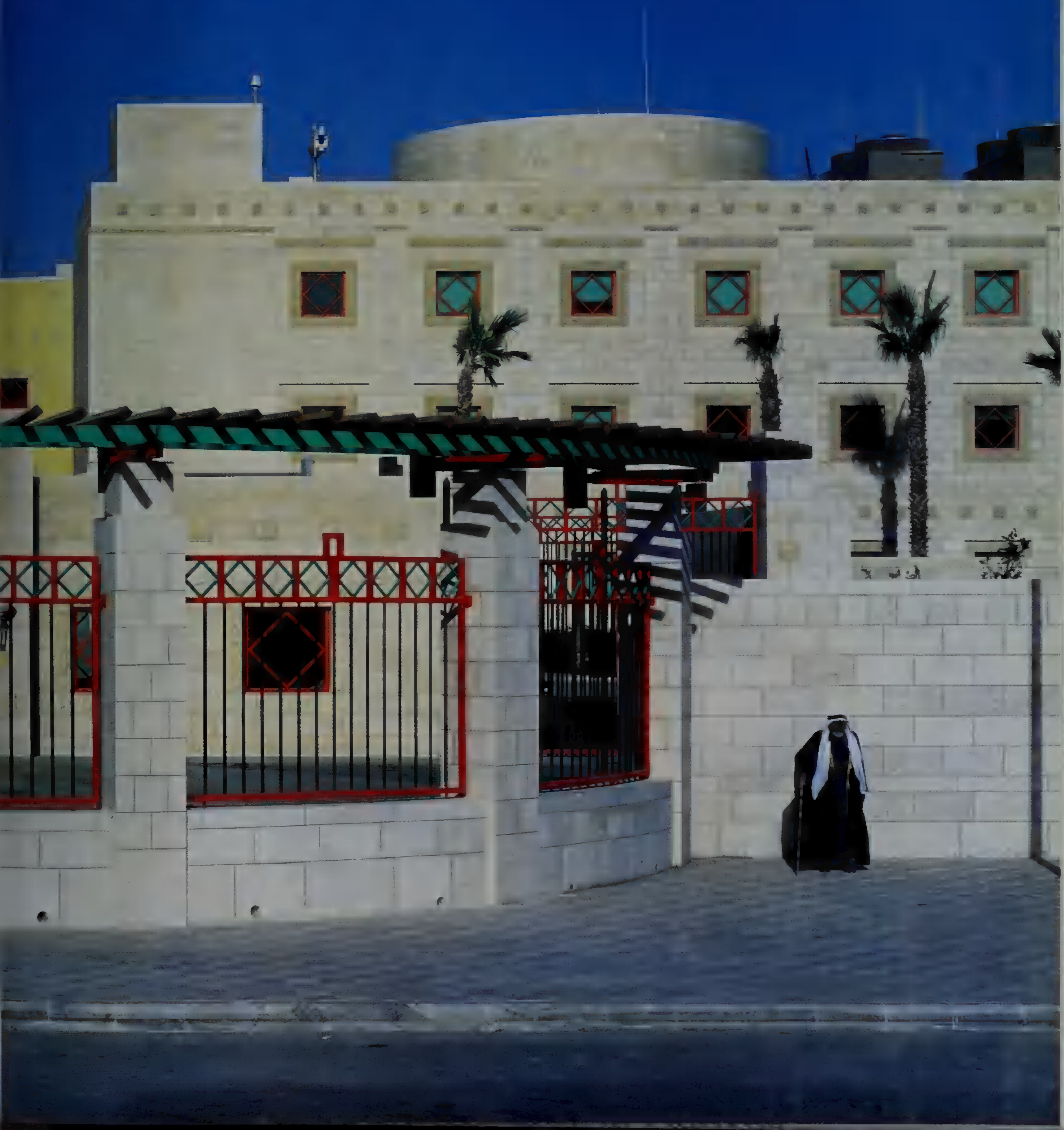


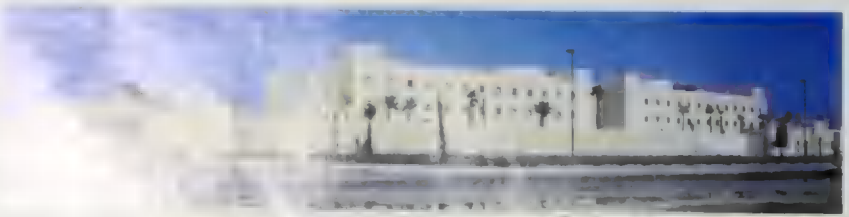
It's hard to consider the architecture of U. S. embassies without reflecting on the 1983 destruction of the Marine barracks and embassy in Lebanon by a terrorist truck bombing. With hundreds of marines and staff killed, the catastrophe set off a soul-searching that produced strict new congressional mandates for the design of consular facilities. While the debate as to whether the elaborate security measures are worth their great expense continues, Amman's new embassy compound represents the difficulty of reconciling security with diplomatic welcome.

At the time of the bombing, Perry Dean Rogers was being considered as architect only for a new embassy residence in Jordan. The new security requirements caused the State Department to bring together facilities from several different locations, creating a new compound fortified with full perimeter walls, deep building setbacks, secured entrances monitored by Marine guards, and small external windows. [For more on embassy security, see RECORD, August 1992, pages 36-37]. To find a site large enough to meet these needs meant that the embassy had to move to the edge of the city from its center, a location both less convenient and less important symbolically.

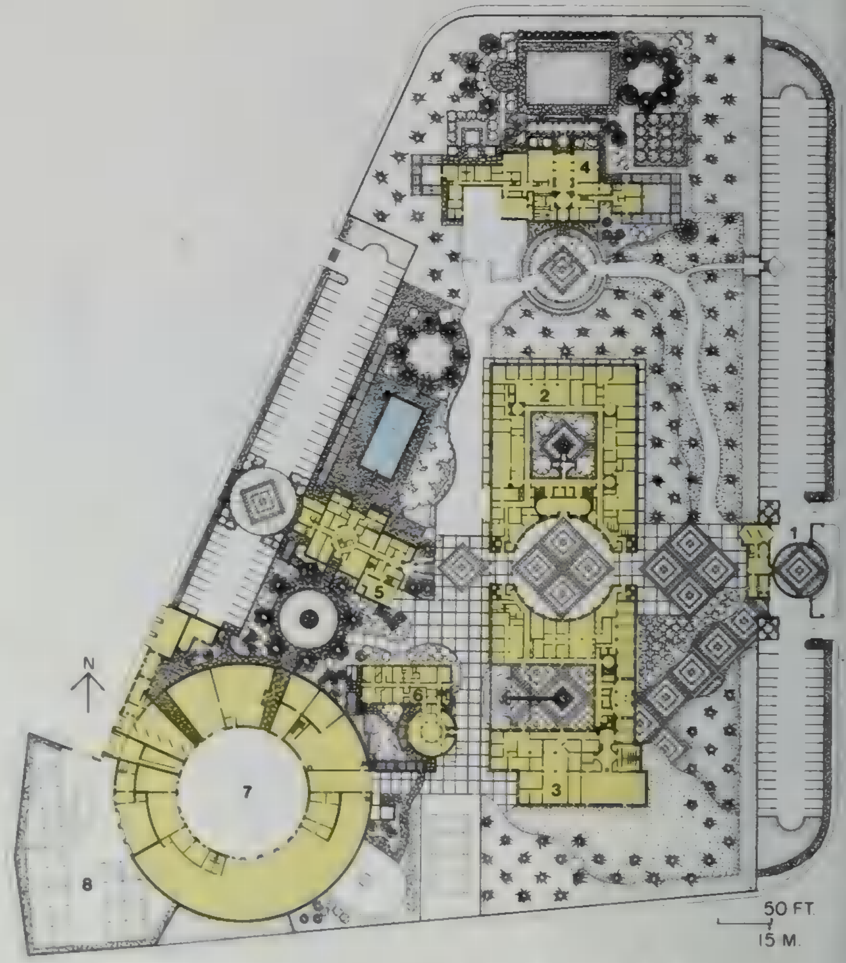
Architects of other recent embassy projects have had some difficulty meeting antiterrorist guidelines while representing the building as an embassy rather than a bunker. Perry Dean Rogers drew on local building traditions: "We didn't have problems with the security directives because it's so hot you don't want large openings," comments partner Charles Rogers. The embassy is an architecture of walls: rough cut or honed (which reveals the delicate figuring of the Jordanian stone); uncoursed fieldstone and one-third running bond. The structures within the compound, built as primary geometric forms, pick up the sharp, powerful light. The chancery, the symbolic as well as administrative center of the compound, rises over the perimeter walls as a formidable masonry block, its tower-like corners evoking fortifications (previous pages). Public areas, such as offices for information and development, commercial attachés, and visa applications, are located in an annex (site plan).

Though the stone surfaces echo the monochromatic landscape, the severity of the architecture is tempered by grillwork drawn from local prototypes, tinted-concrete paving that abstracts traditional fabric patterns, and trellises and awnings painted bright colors inspired by Bedouin clothing. Though these elements are deployed in a consistent way throughout the compound's five buildings, connections between individual structures are much less clearly integrated. (The architects aligned buildings to the irregular site's edges.)

The project's contextual touches suggest that Americans want to learn from the Middle East's rich and ancient culture. In contrast, the embassy building boom of the '60s gave us an image of *pax Americana:* open, confident, forward-looking, but arguably indifferent to local conditions. Even in the skilled hands of Perry Dean Rogers, the Amman Embassy is defensive, inward-looking, its message shows America ambivalent. It's an apt reflection of America's uncertain place in a radically altered world. *James S. Russell*

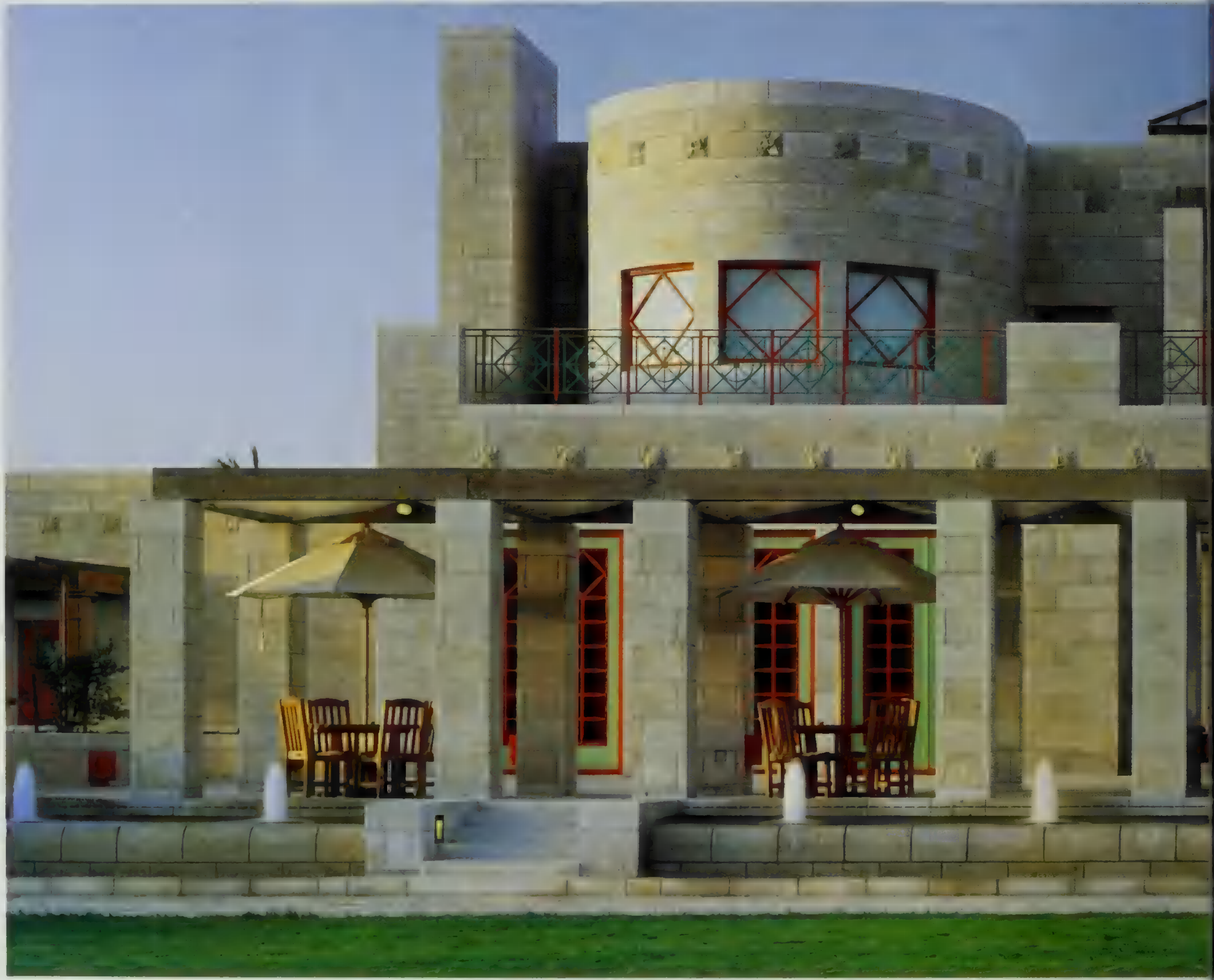


© *Richard Mandelkorn photos*

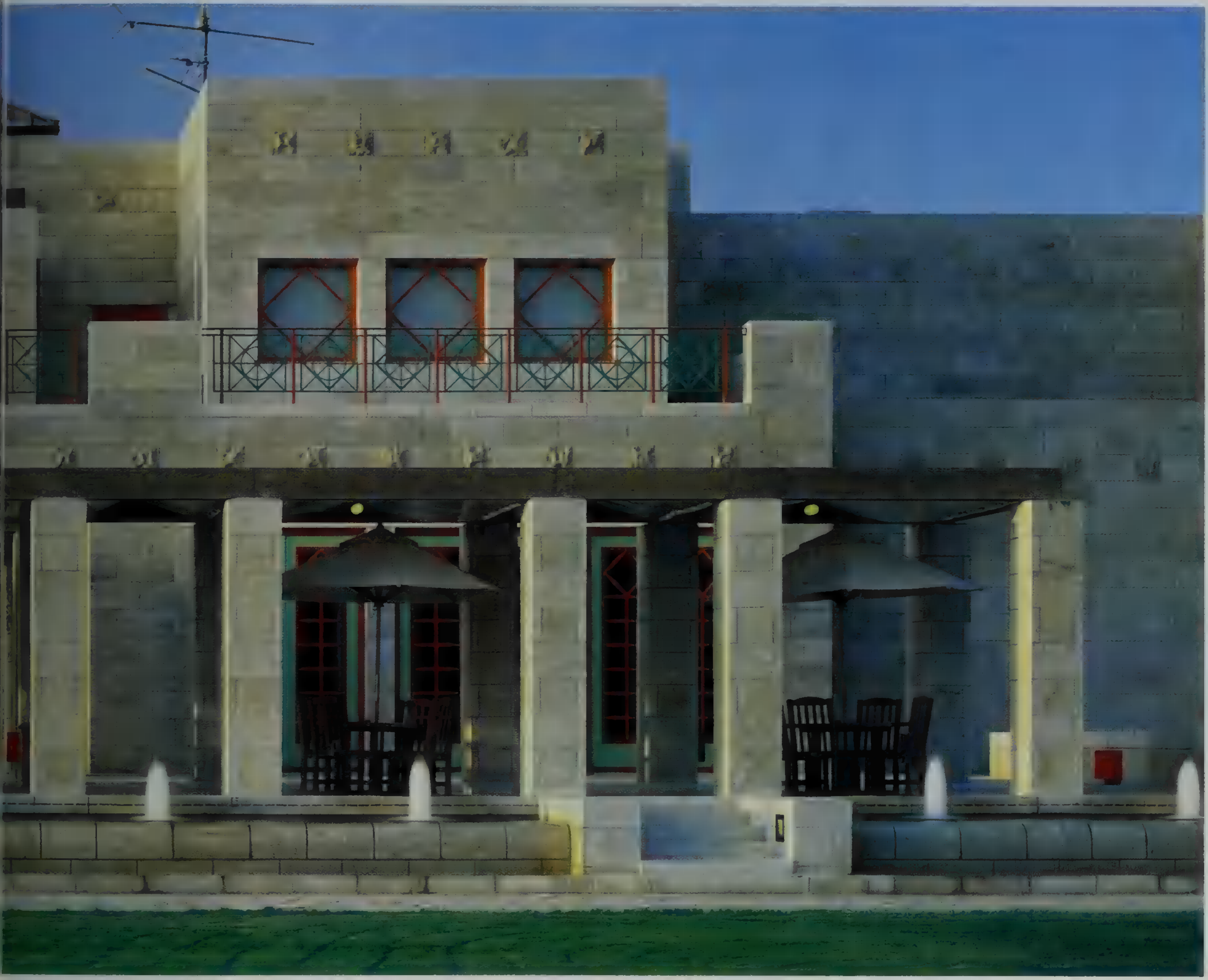


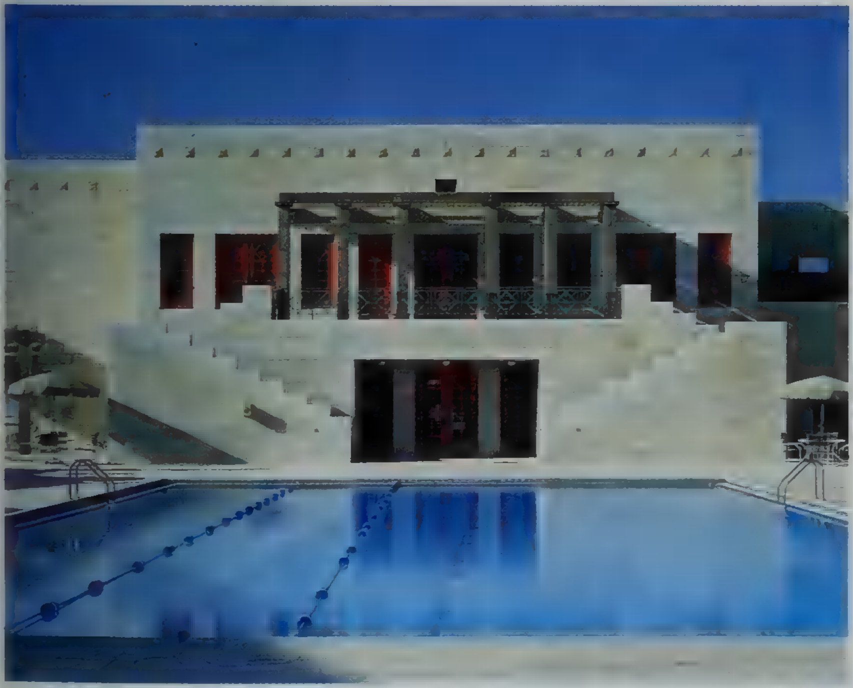
1. Main gate house
2. Chancery
3. Chancery annex
4. Ambassador's residence
5. American Club
6. Marine guard quarters
7. Service annex
8. Motor pool

Strict security requirements, which included deep building setbacks from adjacent streets ("standoffs" to dissipate terrorist-bomb explosions), meant that the new embassy compound needed a large site, one that could only be obtained on the developing edge of Amman. The 9-ft-high perimeter wall is interrupted at the entrance by a trellised metal fence, which invites the eye into the courtyard of the chancery (previous pages—a guarded sally port is just outside the photo). Grilled windows on this elevation are tempered triple-layered glass. Two massive piers and paired stone drums mark the central ceremonial entrance that leads to a circular courtyard, faced with yellow stucco, inside the chancery (opposite).



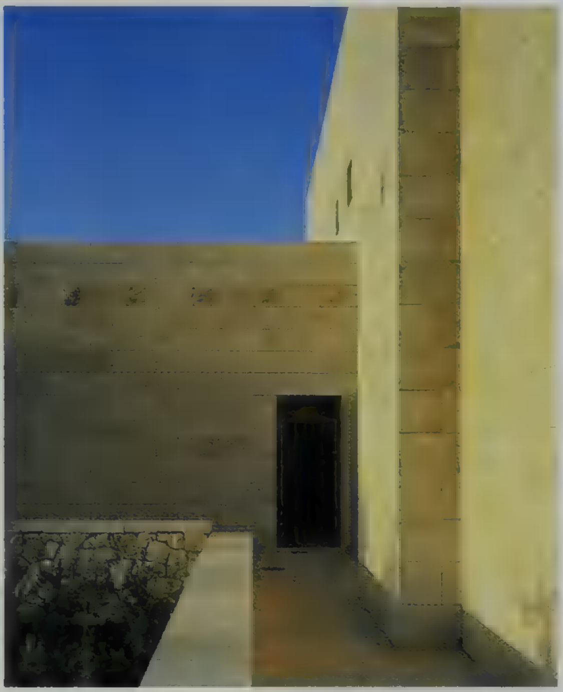
Aligned to the chancery, the compound's second most important building is the ambassador's residence (garden side above). The ground floor contains a suite of public rooms that, divided, are suitable for receiving small groups of visitors or, opened together and to the gardens, make entertaining several hundred guests possible. Private quarters occupy the upper level.

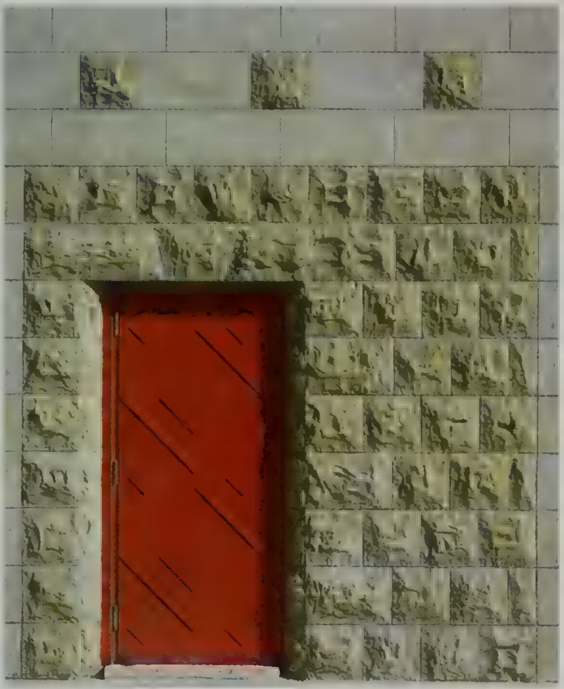


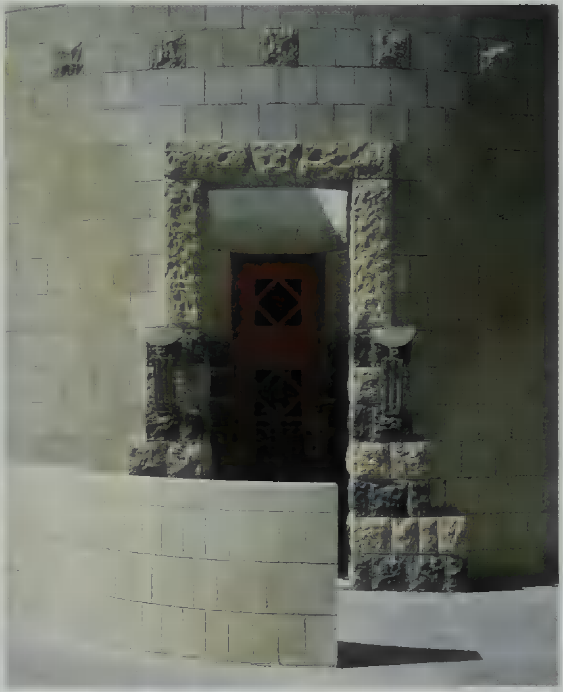


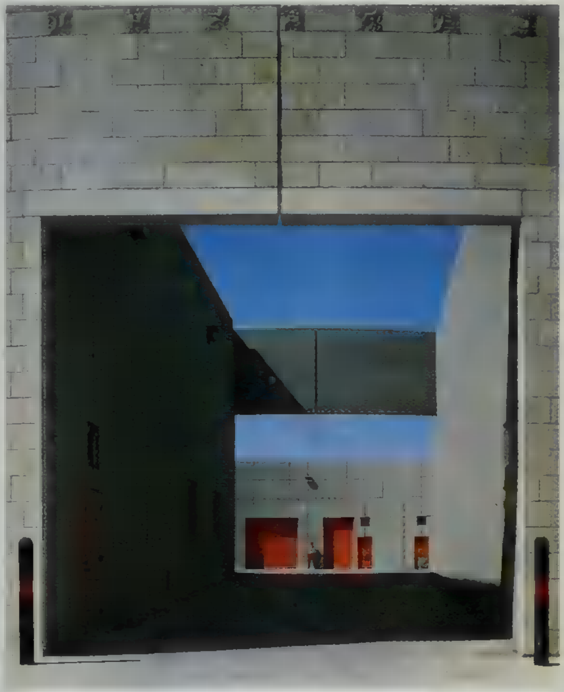
Served by its own parking and secured entrance (opposite bottom), the American Club is a recreational facility open to all visiting citizens. Protected by trellises and walls, the club faces a garden and pool (left). Lushness is husbanded here; dry-climate planting is used in most areas of the compound.

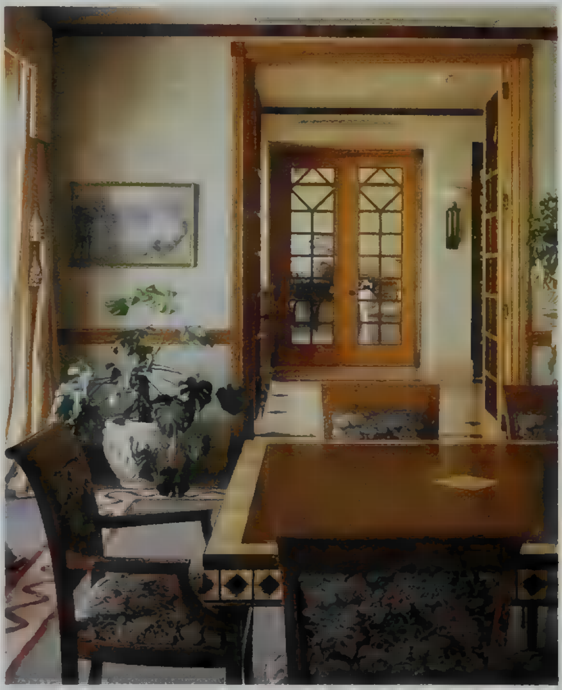
Perry Dean Rogers resolved the seemingly opposed intentions of security and a more conventionally American openness and informality through local architectural tradition, which derives its strength from powerful, unbroken geometric forms tempered by small-scale and surprising occasions for exuberant ornament—such as doorways. A trellis, for example, contrasts with the massiveness of planar walls (opposite). The sharp light picks out delicate textures in the honed finish of local stone (top left), which contrasts with rough fieldstone garden walls. Rough-cut quoins decorate the portal to the marine-guard compound (middle left) and surround an embossed metal door (top right). The door's color is often used locally in fabrics. Middle right: view into the service annex. Bottom: the vestibule (right) and reception rooms (left) in the ambassador's residence.

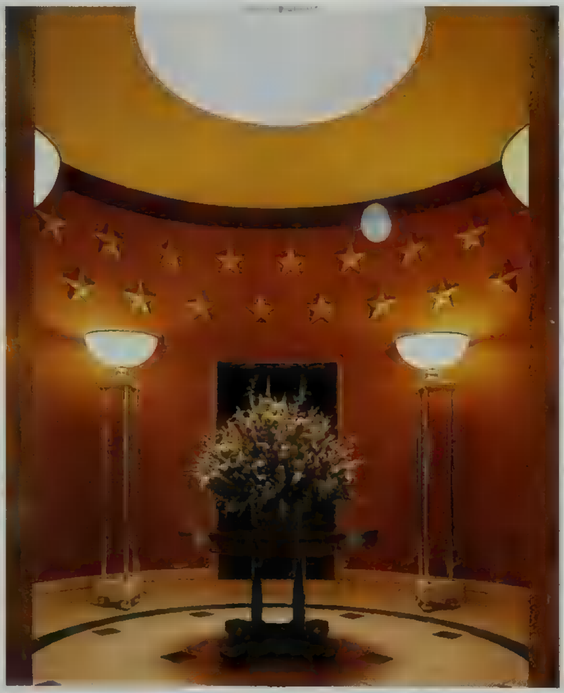








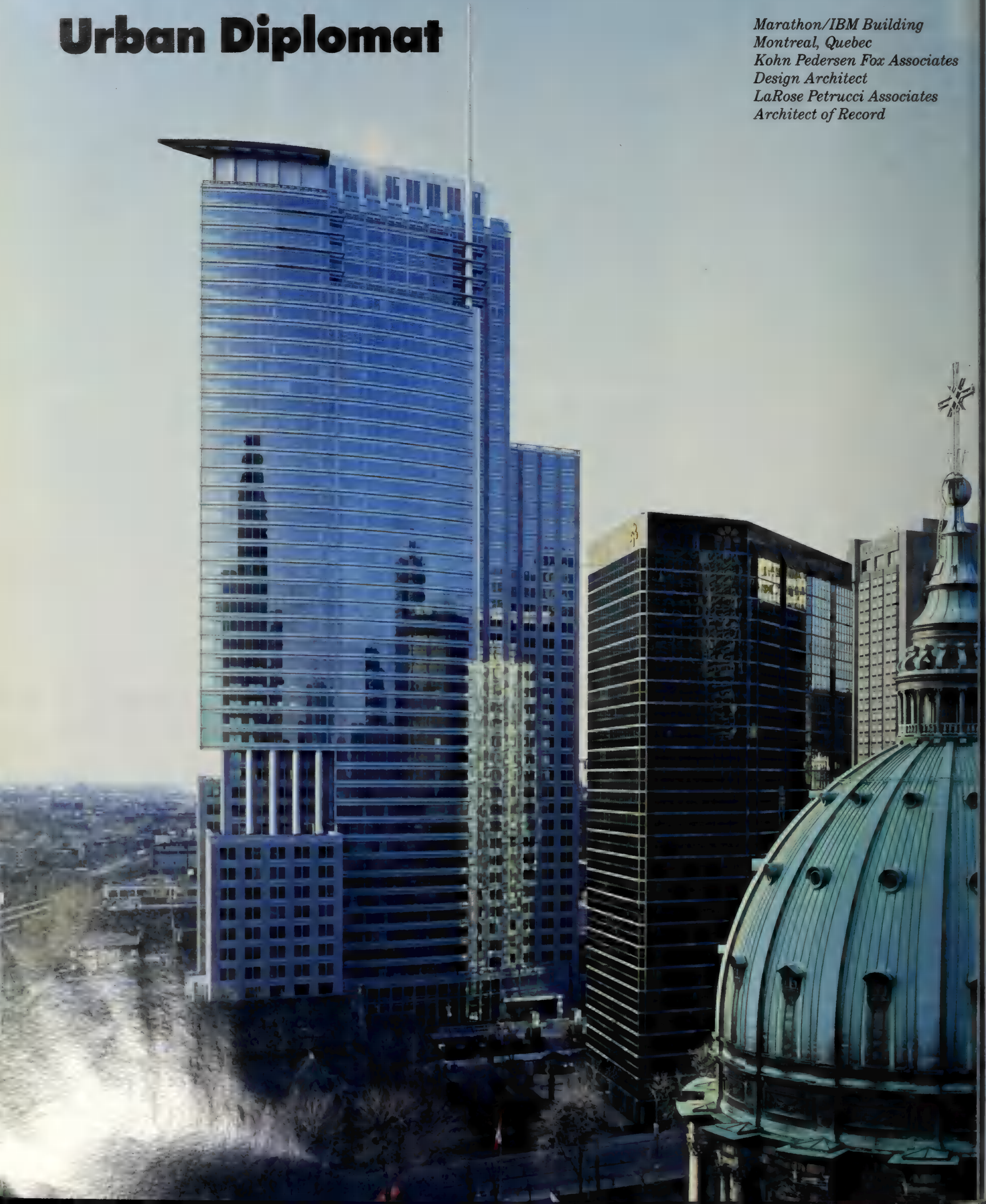


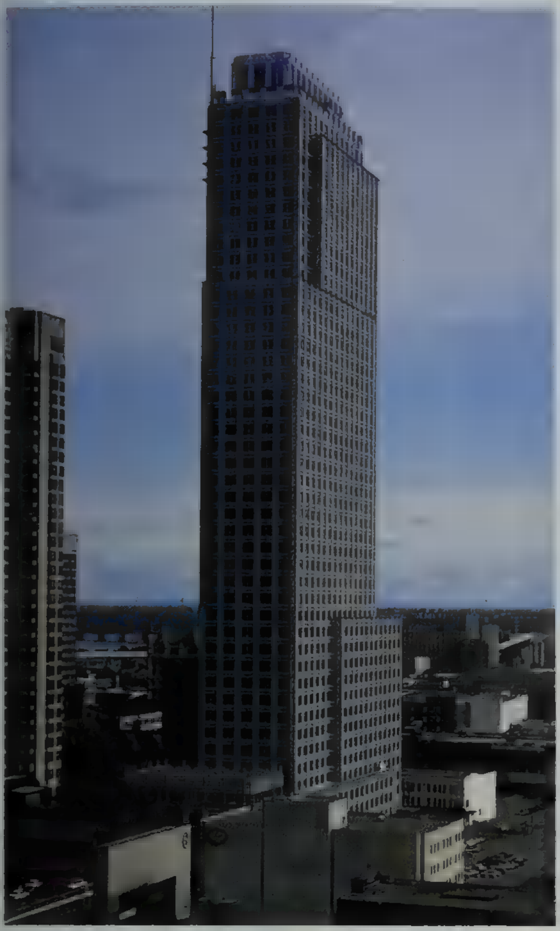


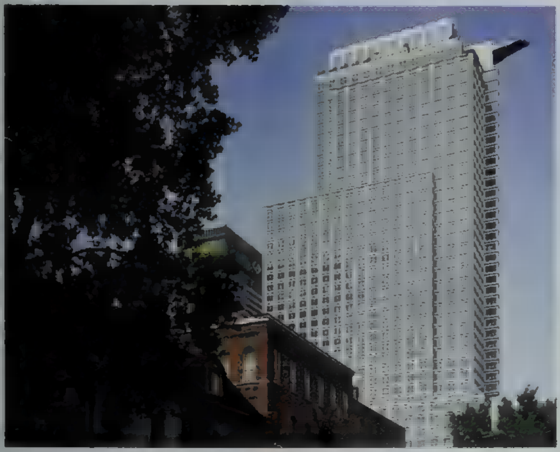
Credits
United States Embassy
Amman, Jordan
Owner: *Department of State*
Architect: *Perry Dean Rogers & Partners—Charles F. Rogers, Peter A. Ringenbach, principals-in-charge; Dell Mitchell, principal-in-charge (interiors); Gabriel Yaari, David N. Storeygard, Thomas J. McCarty, Thomas Hess, Treffle LaFleche, Richard Terrell, Bruce Hutt, Robert Vigiant, Koonshing Wong, Liliane Wong, Anna Wu, project team; Catherine Suttle, Theresa Harriman, interiors*
Consulting Architect: *Jafar Tukan & Partners (Amman)*
Engineers: *LeMessurier Consultants (structural); BR+A/Bard, Rao + Athanas/ Sullivan Partnership (mechanical, electrical/ plumbing/fire protection)*
Consultants: *Jerry Kugler Associates (lighting); Peter Walker (landscape)*
General Contractor: *American International Contractors*

Urban Diplomat

Marathon/IBM Building
Montreal, Quebec
Kohn Pedersen Fox Associates
Design Architect
LaRose Petrucci Associates
Architect of Record




©Richard Payne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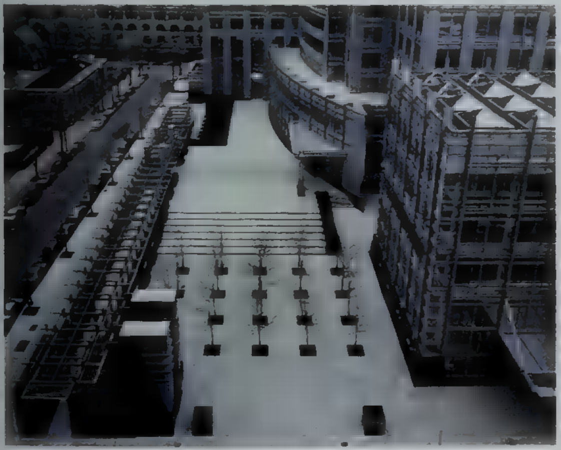

Marathon/IBM's interlocking forms allude to surrounding buildings. Tinted green glass picks up the color of the copper dome of a nearby landmark church. The long building and a steel trellis (bottom) define two edges of an entry plaza.

Designed in 1988 and recently completed, the 50-story, 1.6-million-square-foot Marathon/IBM tower by Kohn Pedersen Fox (KPF) is not just a meticulously detailed *tour de force* but a contextual diplomat urging the combative Montreal skyline into a peaceful whole. The new building also redefines KPF. Taking the lead in corporate Postmodernism during the 1980s, the firm branded itself with a much imitated trademark style and urban approach. The firm's commanding Montreal effort, which recalls its Modernist origins, signals that KPF has molted, and emerged transformed.

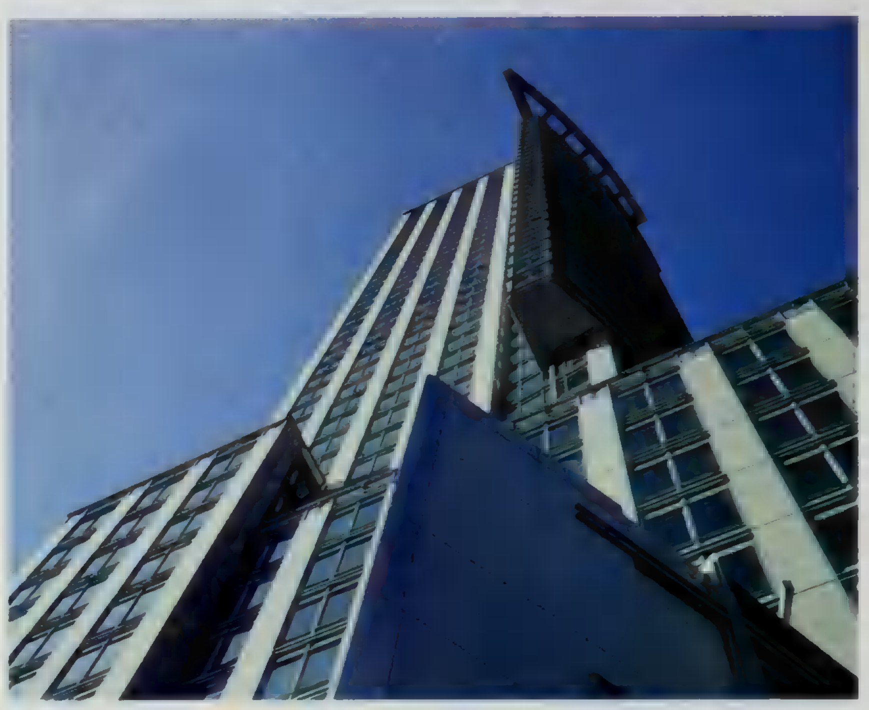
At a distance, Montreal's most imposing skyscraper looks like several buildings. The architects have broken the notion of the high-rise as a point tower and closed container, creating a complex assembly of volumes, each referring to neighboring buildings through shape, color, and height. A one-building composite that is extended across the skyline, Marathon/IBM was reconciled to its more egocentric neighbors by linking them visually into a formal community. Its multiplicity of scales mitigates the behemoth's potentially crushing impact. In its urban context, there is also a distinct historical challenge. I. M. Pei's Place Ville Marie is nearby—the cruciform tower built by William Zeckendorf which for a generation set Montreal's standard. Whereas Place Ville Marie represents a simple Euclidean geometry realized in elegantly monochromatic materials with disappearing details, KPF has generated a much more free-form design, with expressed joints and connections and differentiated forms and materials playing off each other—the bowed facade against orthogonal blocks, a predominantly glass curtain wall against one with more stone, aluminum against wood, fired stone against polished. The eye actively roams this building, propelled by its massing and drawn up, down, and across by its surface patterns. William Pedersen, the partner-in-charge of its design, opened the most closed of building types, the high-rise, by mixing the informal and formal. By its quality, presence, urban mission, mechanical expression and detail, it claims lineage from unbuilt Constructivist skyscrapers.

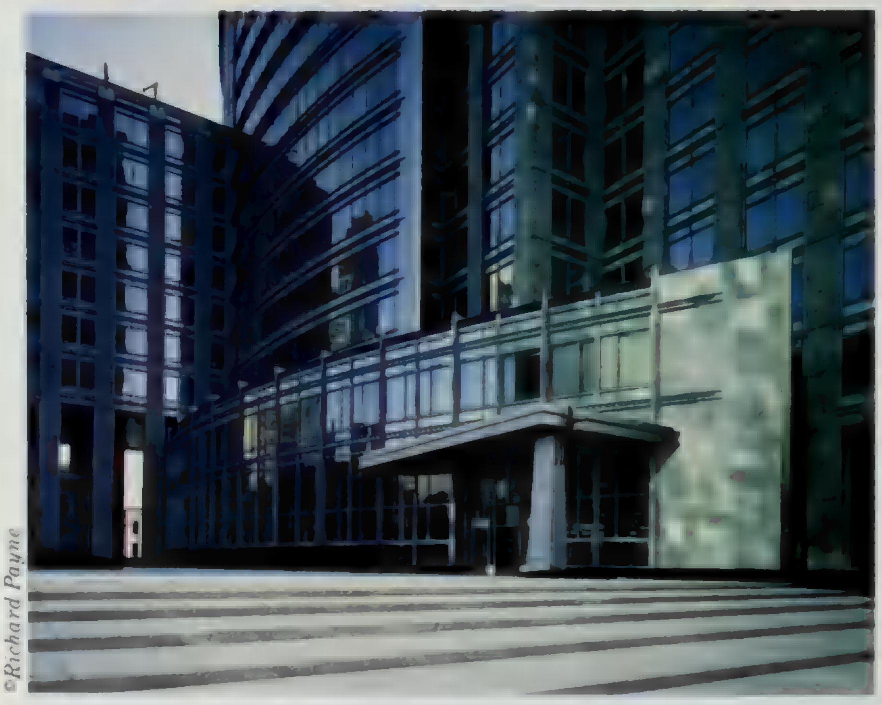
Beyond the complex massing and open form, there is a subtext involving window frames. Thin and recessive in one facade, they are prominent in another, and in the winter garden emerge as full-blown columns. These always-changing secondary frames, in turn, metamorphose into a hardware system of handrails and canopies applied throughout the building. The hardware brings the window frames from the 50-story architectural field down to elements people touch. Bolts emphasize the mechanical connections, giving a level of small-scale detail to a building richly developed at other scales.

Conspicuously handsome and beautifully crafted, Marathon/IBM is also experientially rich. Unlike most container buildings, where visitors are either inside or outside, the ground floor extends beyond the main envelope, with several levels, connecting stairs, and a ramp. The main floor and mezzanine, with restaurants and stores, seem less object than experience, a complex topography programmed like a city street. The building escapes any sense of being a closed tube engineered for air-handling.

Pedersen has orchestrated a difficult whole that is formally complex, programmatically diverse, and urbanistically both grand and intimate, without making the whole appear strained or arch. Now that it has been built, the building's complexity appears to be obvious and inevitable: its resolution and elegance make it seem effortless and even simple. *Joseph Giovannini*

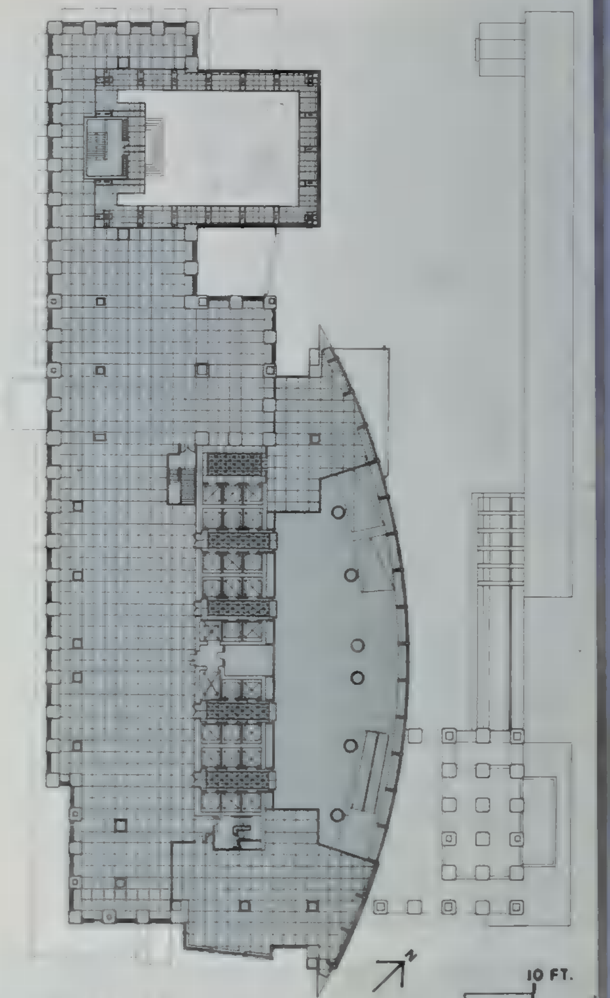
Joseph Giovannini is a New York-based architect and critic.



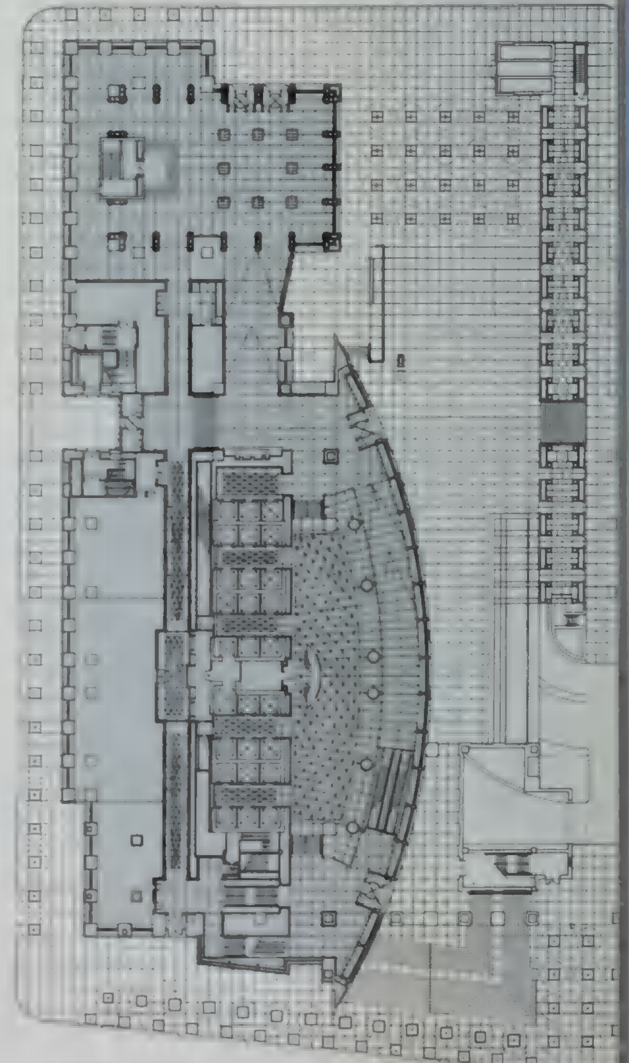


©Richard Payne

The Marathon/IBM tower frees the full block for public space (plans, right), divided almost equally between inside and outside. A stand of trees outside the building mirrors a stand of bamboo in a garden court that leads to the entry concourse, a restaurant, and a corridor of stores. The mezzanine is devoted to fast-service food concessions with free seating overlooking the garden court. [illegible] the [illegible] of the tower (above) [illegible] beyond the [illegible] building forming a [illegible] whose [illegible] sculp- [illegible] volumes (top). Punctuating the volumes are the eyebrow at the top of the tower and an entry canopy. A high-tech awning skirts the back facade (right) protecting pedestrians and giving the sheer face of the rear facade a human scale along the street. Materials—fired white granite and black polished granite—are richly orchestrated, and designed to give the curtain wall the abstract reading of columns with a base, shaft, and capital.

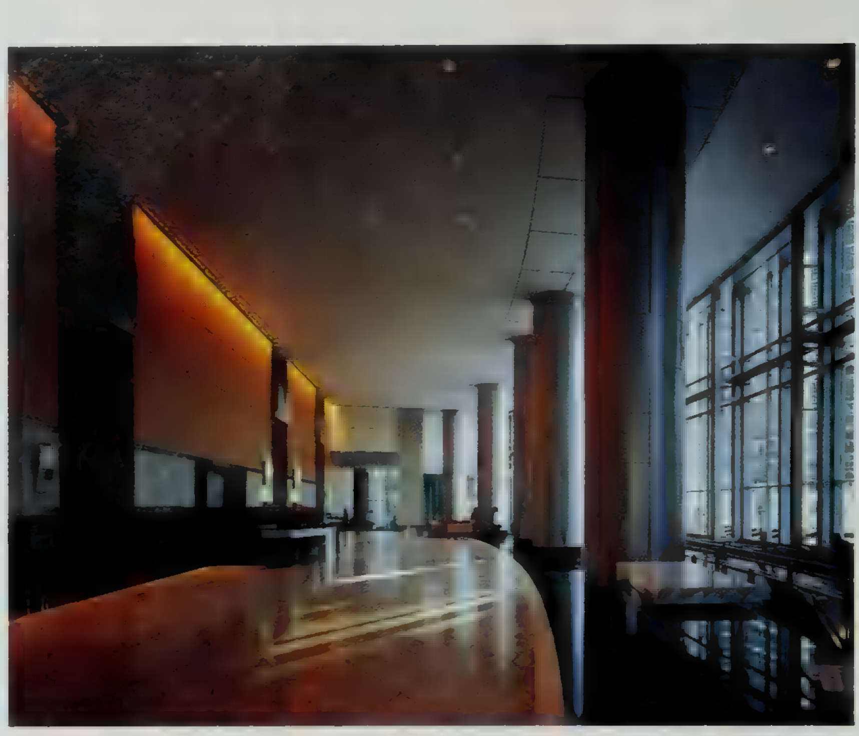


MEZZANINE LEVEL



GROUND LEVEL

BANQUE NA
CAA



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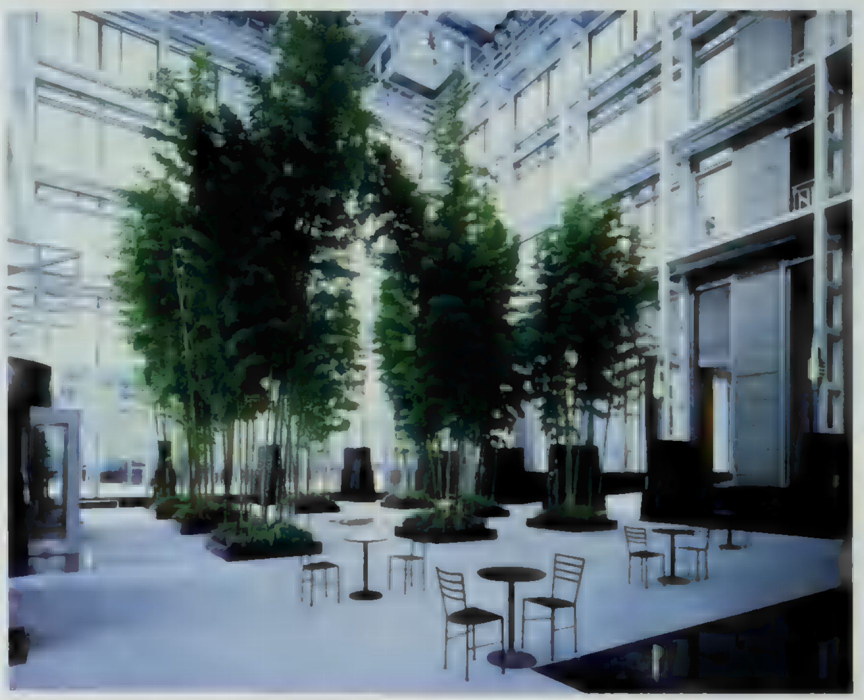

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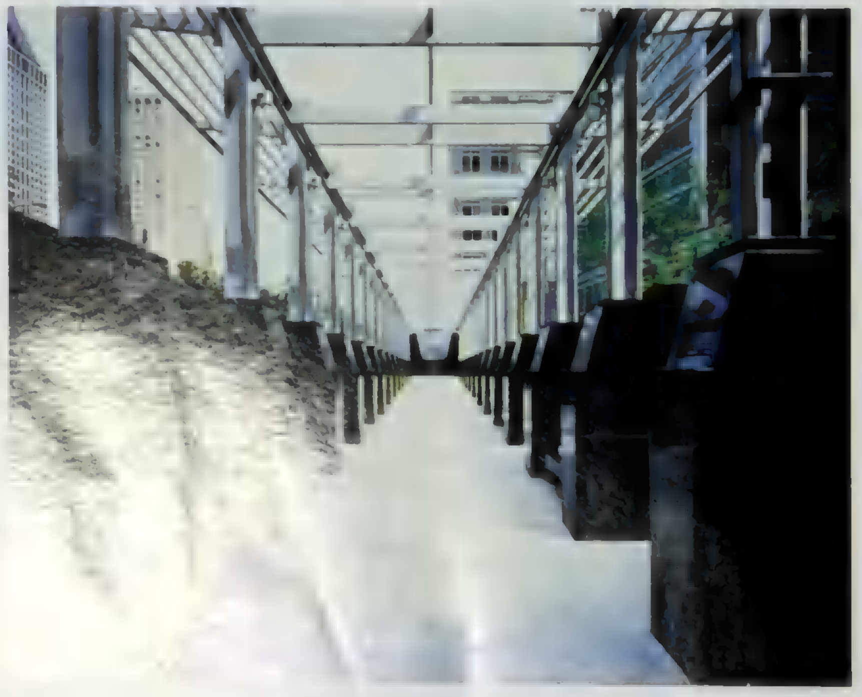


A ramp outside the tower's main structural columns (opposite) sweeps by the bowed front wall of the entry pavilion, leading to the subway and to the elevator concourse to the right of the columns. Doubled rails and supports for the balustrade and paired steel columns at the window wall help break down the scale. Beveled edges seem to sculpt volumes from the transparent glass inset in the balustrade. Columns are detailed to recall the classical tripartite order.

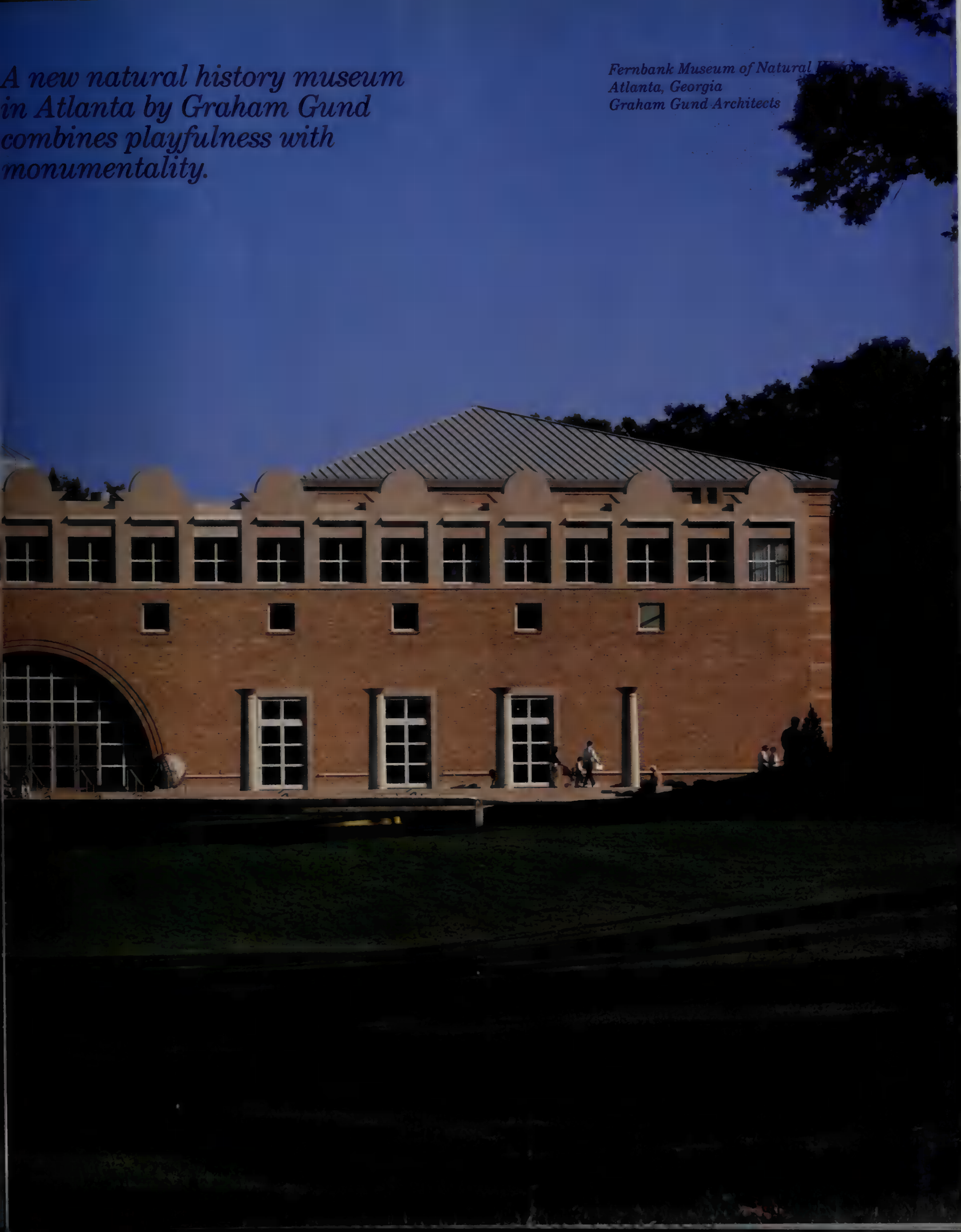
A mixture of materials banding the floors and walkways enlivens the entry, giving the space a richness (1). A small bamboo forest grows in the garden court that occupies a pedestrian path between the street and elevators (2), and recalls the public court in the New York City IBM tower. A colonnade leads down a corridor lined with benches (3).

Credits
Marathon/IBM Building
Montreal, Quebec
Design Architect: *Kohn Pedersen Fox Associates Architects—A. Eugene Kohn, partner-in-charge; William Pedersen, design partner; Sudir Jambhekar, senior associate partner/project manager; Richard Clarke, associate partner-in-design; Glen Da Costa, job captain; John Koga, Stephanie Spoto, Miriana Doneva, Carlos Menendez, Bruce Eisenberg, Carol Buhrmann, project team*
Architect of Record: *LaRose Petrucci, Associates—Giles LaRose, partner-in-charge; Charles Lamy, associate-in-charge*
Engineers: *LeMessurier Consultants (structural design); Pasquin, St.-Jean and Associates, Inc. (structural engineers of record); St.-Amant, Vizina, Vinet, Brassard (mechanical/electrical)*
General Contractor: *Magil Construction*

Natural Simulation

A new natural history museum in Atlanta by Graham Gund combines playfulness with monumentality.

Fernbank Museum of Natural History
Atlanta, Georgia
Graham Gund Architects



Graham Gund practices an architecture that is a playful simulation of the architecture of the past. A child's rebus, you might call it. Cut out simplified words and pictures from a child's book of architectural history, shuffle them, then paste them up to form a new pictorial message. Such lighthearted simulation makes Gund the perfect architect for the new Fernbank Museum of Natural History. For the museum is largely simulation too—a simulation of the natural environment of Georgia, astonishing in its accuracy.

At 160,000 square feet, Fernbank is the biggest natural history museum south of the Smithsonian. Yet it had to be tucked unobtrusively onto a site carved from the backyards of former mansions in a toney neighborhood of Atlanta. Gund solved that problem by pushing the building deep onto the property and keeping it low at the entrance, the only part you see from the street. Only at the back does the museum express its full height. Here Gund arranged a terrace, a café, and a public atrium so that all look onto a wooded ravine, creating a grander version of the backyard barbecue terrace of a suburban home. The ravine is Fernbank Forest, a 65-acre preservation area, and at its farther end stands an older facility, Fernbank Science Center, which acts with the new museum as the yin and yang of a single complex.

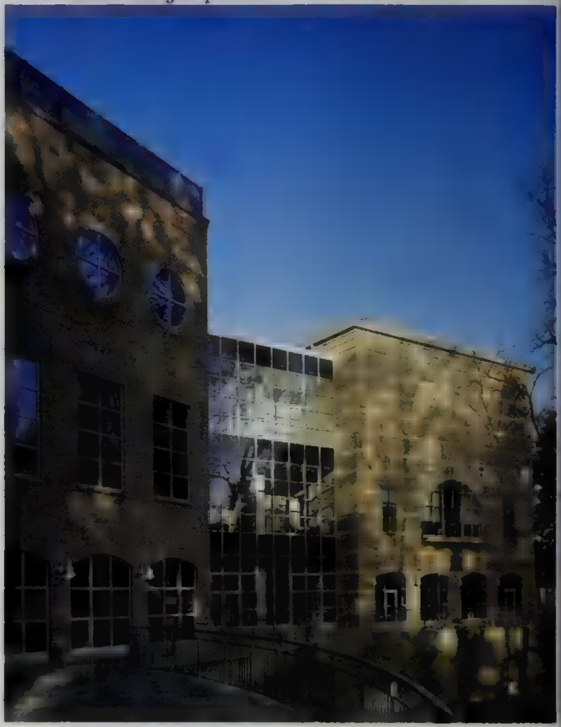
Gund may be the last of the truly committed generation of Postmodern architects. At his best, he creates work that is at once monumental and playful. From the entry side, Fernbank is a big symmetrical building: a starched-shirt facade. You're left in no doubt of its civic importance. Yet it isn't pompous. The entrance is an oversized cave-like arch, the roof-line is enlivened by a row of shapes that look vaguely like cut-out frogs or ice-cream sundaes, and there's a row of hey-look-at-me-I'm-not-holding-anything-up columns across the front. Everything strikes the right note: grandeur subverted by whimsy. A child's view of adulthood.

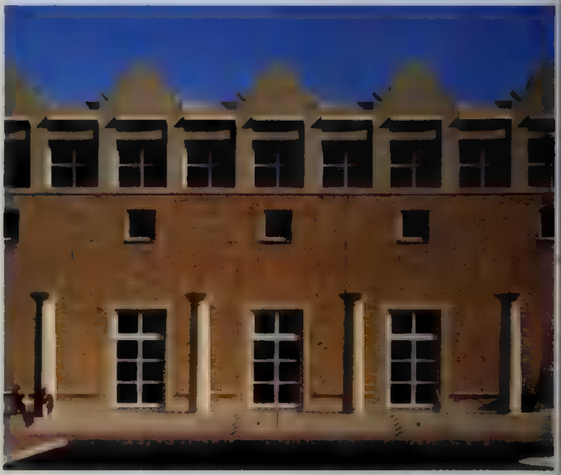
Indoors, a big lobby organizes the visitor services and information systems with great clarity, then thrusts you forward into a three-story skylit atrium—the "Great Hall"—that provides access to everything else. Here tall steel columns rise and sprout like trees into beams and trusses, in a reminiscence of the great glass-topped halls of Victorian museums. Besides architecture, there's not much to look at in the Great Hall, since it was designed so it could be rented out for weddings, conferences, and the like.

Gund's office didn't design the museum's exhibits. They're a collaboration among staff and outside consultants led by New York exhibit designer Edwin Schlossberg. A museum for the age of media, Fernbank is the farthest thing imaginable from a grandpa's attic of catalogued fossils and dried plants. At its heart is the permanent theme exhibit, "A Walk Through Time in Georgia." Strung through 15 galleries, this is an eerily lifelike simulation of native granite outcrops, plateaulands, swamps, and barrier islands, all executed with magical accuracy. Will such make-believe entice visitors to explore Georgia's actual swamps and mountains? Or will it prove to be a substitute for reality? Has life been tamed into entertainment? You may find yourself worrying about such questions. But it's a worry [illegible] by [illegible] admiration for the skill of the simulators.

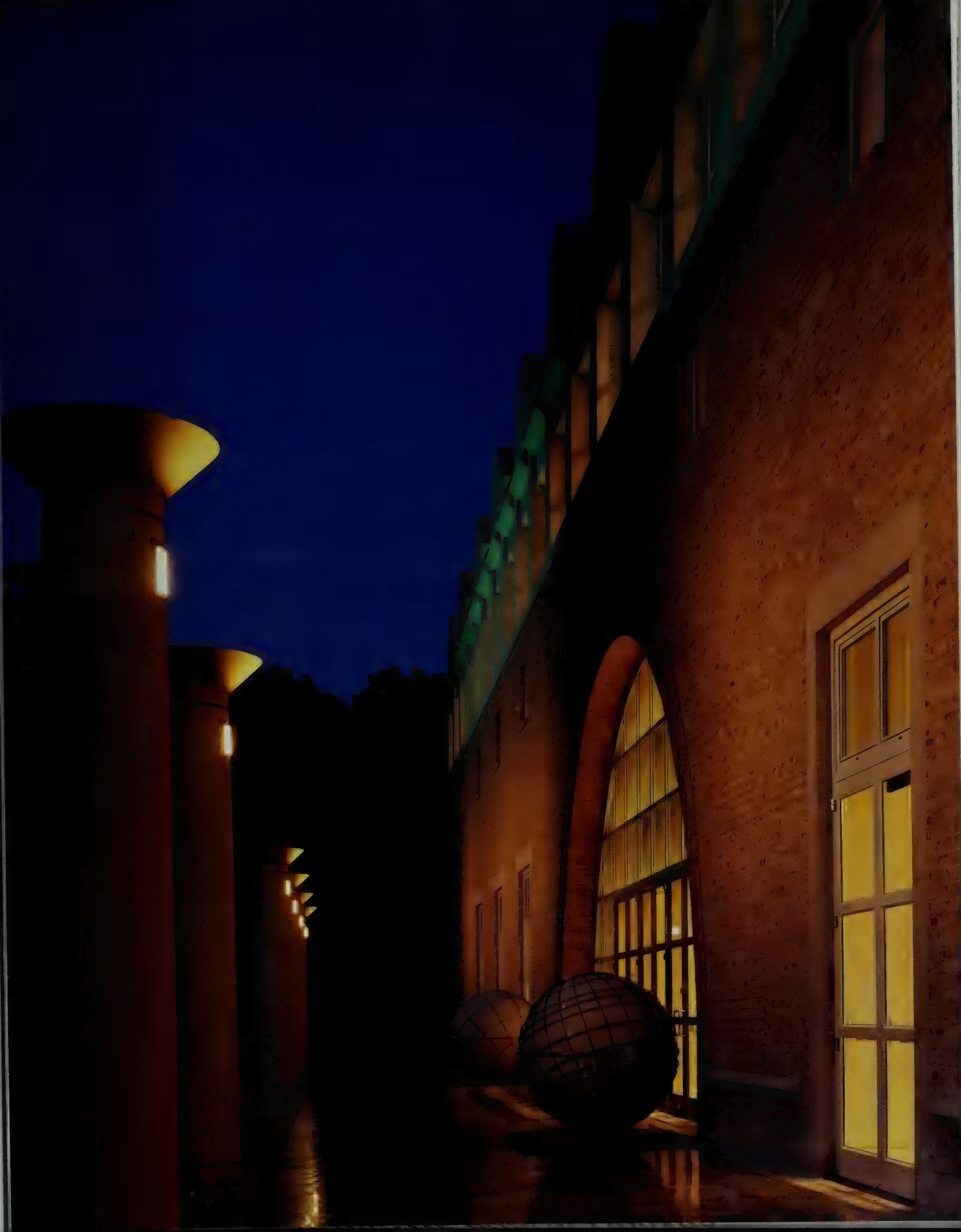
Fernbank also includes an IMAX theater, a large gallery for tempo- [illegible] gift shop, workrooms, and offices. Up on [illegible] section for small kids, a bright plastic [illegible] too much like a playground at

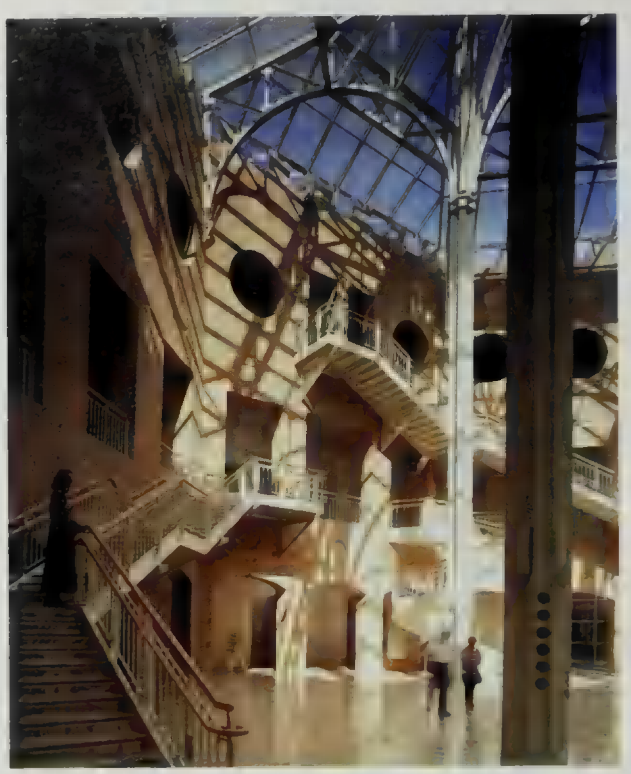
© Jonathan Hillyer photos

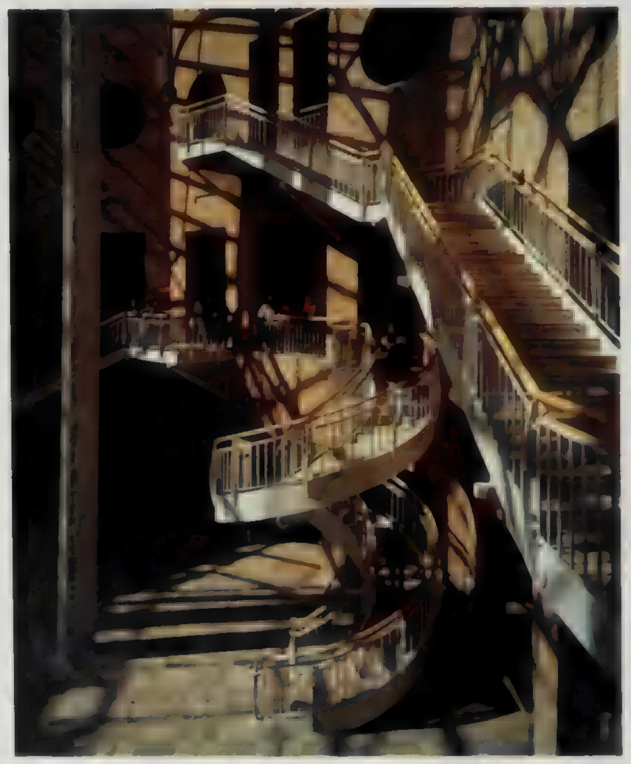


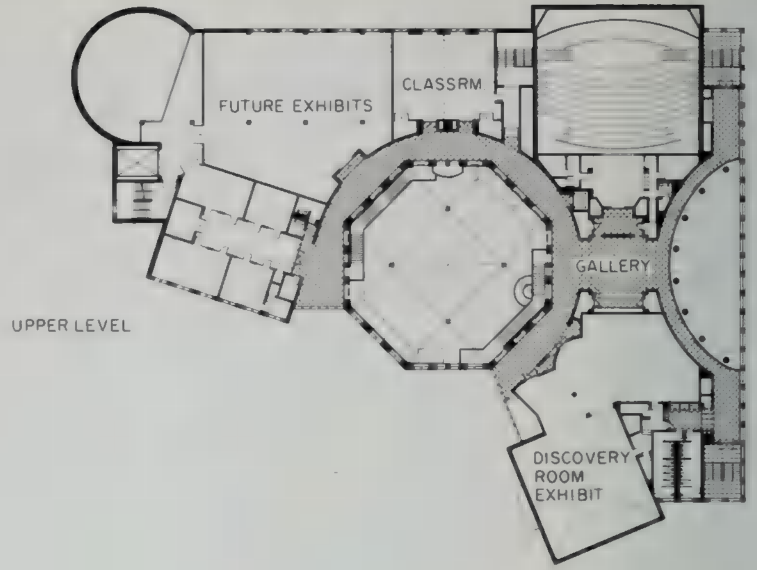


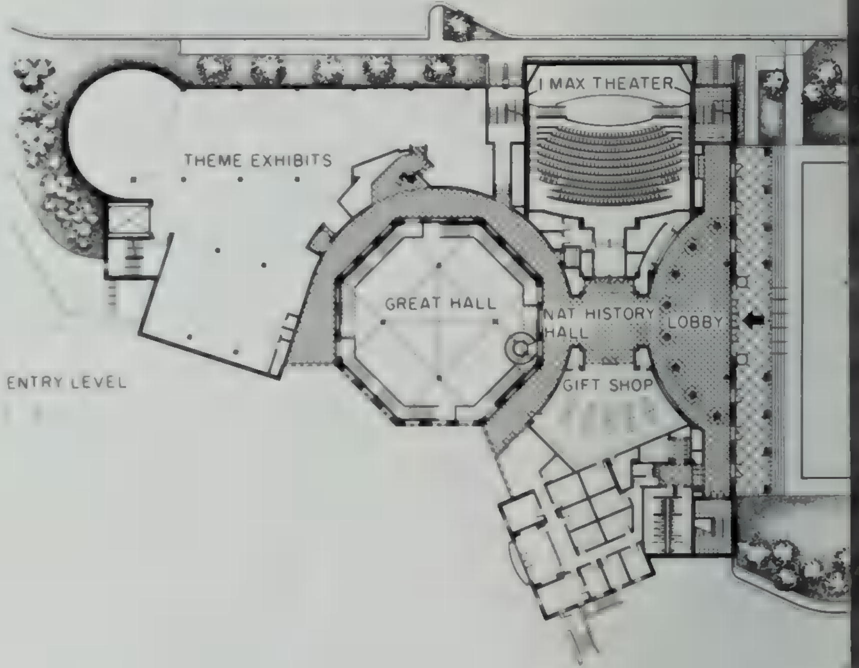
Topless columns are employed as lighting standards to illuminate the facade at night (opposite). An oversized arch flanked by giant spheres serves as the entrance. Both arch and columns announce a theme of playfully inflated formality at Fernbank's public facade (opposite and above). Orange/tan brick, with beige precast trim, recalls materials of nearby houses. At its rear (top) the building relaxes and bends to shape a terrace that overlooks a 65-acre natural hardwood ravine preserved as Fernbank Forest. The rear facade's large glass areas, which face east and are shaded by trees, light the Great Hall and cafeteria.

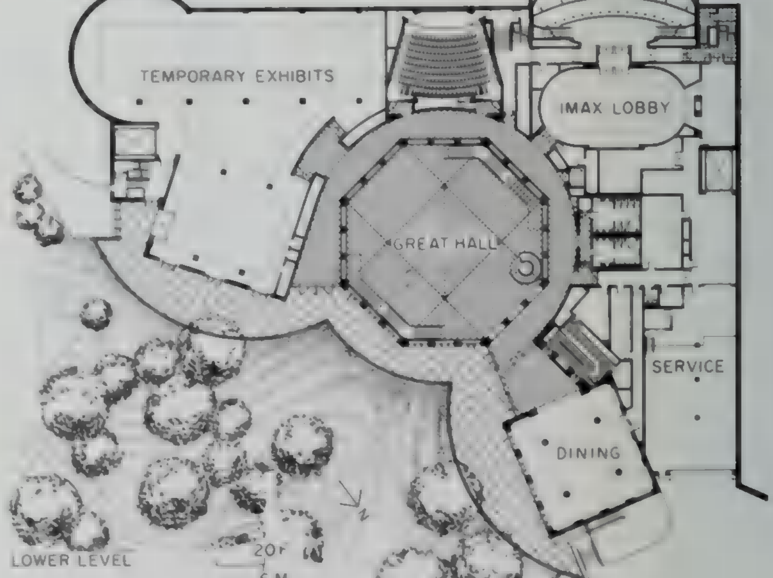




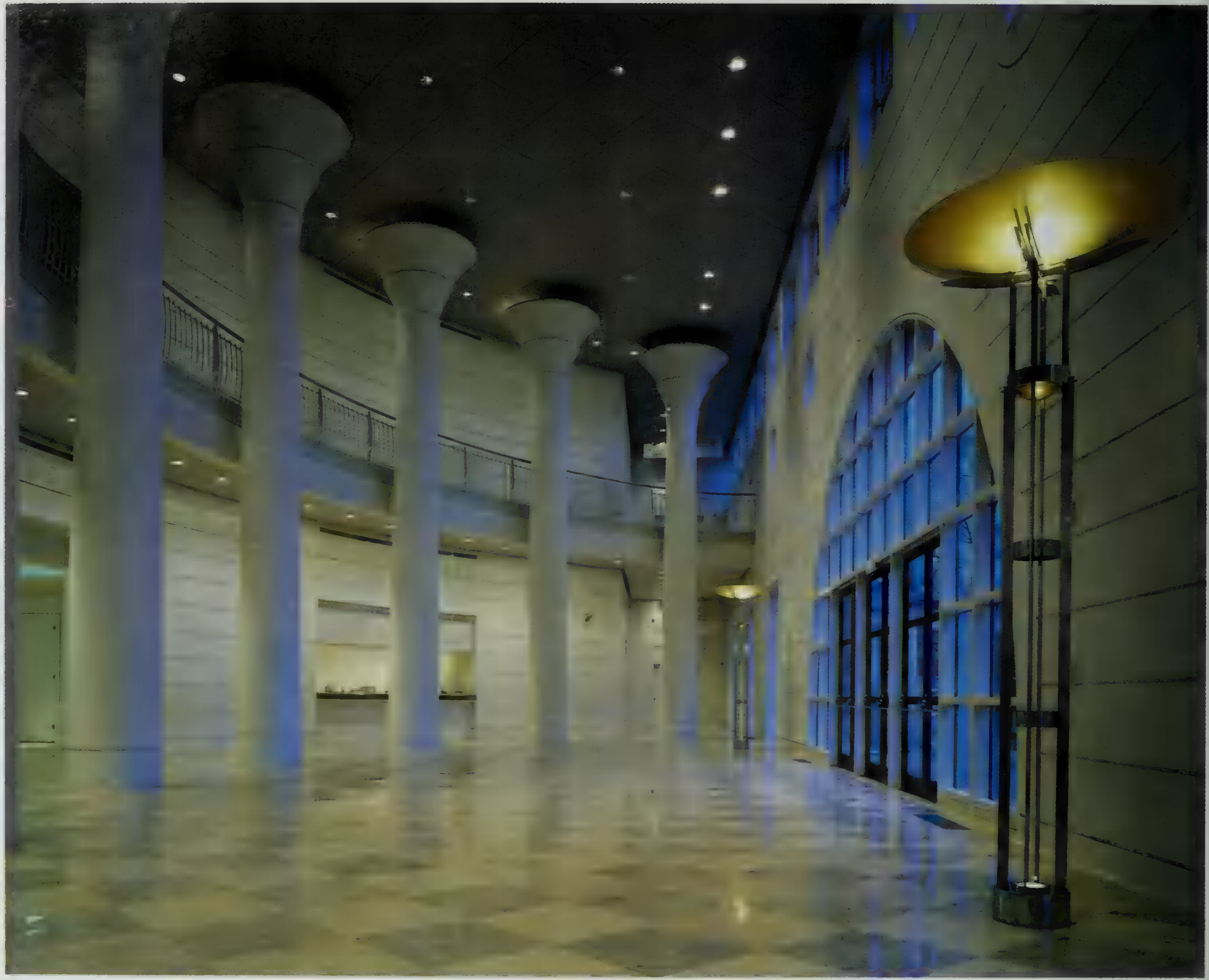








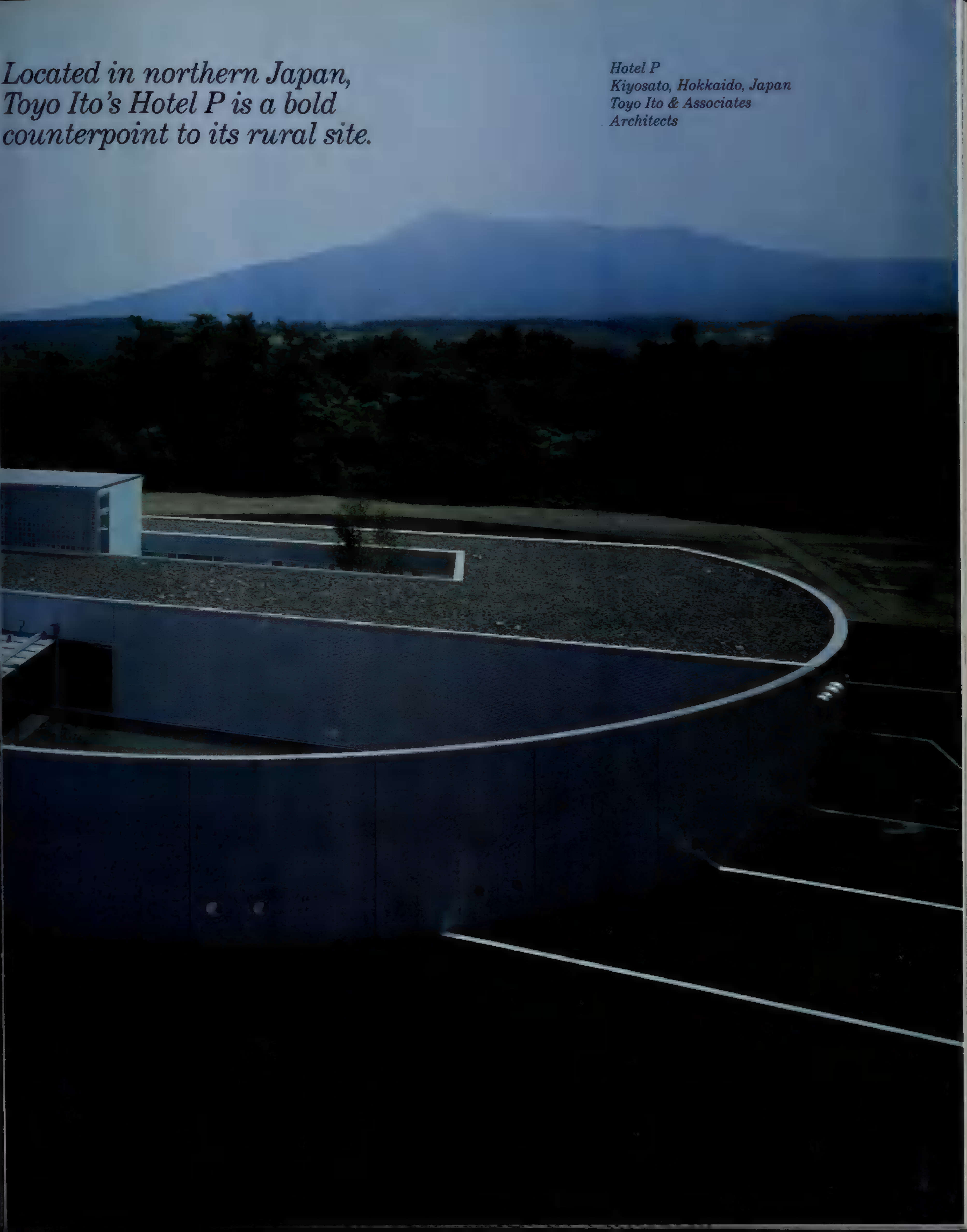
Steel columns (top) sprout like trees in the octagonal "Great Hall" and exfoliate into trusses that support a glass roof and pattern the interior with shadows. Steel stairs (above) climb the wall. Floor plans (right) show how the Great Hall [illegible] organizing [illegible] story in- [illegible] exhibits, the [illegible]



The entrance hall displays a back-lit frieze of flora and fauna (opposite, top) and a crescent of mushroom columns (above). Floors in public areas, indoors and out, are finished in tiles of fossilized German limestone on which can be discerned the ghost imprints of prehistoric life forms. The cafeteria (opposite, bottom), with bentwood chairs by Frank O. Gehry, opens to a terrace overlooking the forest. All major functions, such as the entry to "A Walk Through Time in Georgia" exhibit (right), open from the Great Hall, which can also be rented for corporate and private functions.

Credits
Fernbank Museum of Natural History
Atlanta, Georgia
Owner: *Fernbank, Inc.*
Architect: *Graham Gund Architects—Graham Gund, principal-in-charge; David Perry, principal; John Prokos, project architect; Alec Holser, associate; Donald Self, Jonilla Dorsten, Mary Horst, Katie Barrows, Tom Maloney, Ken Roberts, Dominic Pedulla, Martin Dermody, Jim Tsakirgis, Ping Mo, design team*
Engineers: *LeMessurier Consultants (structural); R. G. Vanderweil (mechanical/electrical/plumbing); W. L. Jorden & Co. (civil)*
Consultants: *Edwin Schlossberg Inc. (exhibits); Harold Cutler P. E. (codes); Mark Kalin Associates (specifications); Howard Brandston (lighting); Cavanaugh Tocci Associates (acoustical); Jon Roll & Associates (graphics)*
Landscape Architect: *Roy Ashley & Associates*
General Contractor: *Beers Construction*

Northern Exposure



Located in northern Japan, Toyo Ito's Hotel P is a bold counterpoint to its rural site.

Hotel P
Kiyosato, Hokkaido, Japan
Toyo Ito & Associates
Architects

In Japan, where mountains and urban sprawl predominate, architects seldom have the opportunity to design buildings for undeveloped rural settings. But Tokyo's Toyo Ito had this chance when the owner of Hotel P decided to abandon his city career to open an inn on Hokkaido, the country's northernmost island. Located on the outskirts of Kiyosato, an agricultural town of 6,000, Hotel P occupies a spectacular site, where potato and wheat fields fan out as far as the eye can see and mountain peaks loom in the distance.

"The first impression I had was that one cannot be too sentimental in dealing with this vast Hokkaido plain," recalls Ito. His initial move was to create a simple 15,000-square-foot "urban air bubble" consisting of two geometric pieces: an ellipse of public spaces and a two-story bar of guest rooms. Though small, the hotel's Platonic forms cut a bold silhouette against the landscape. This stark contrast is reinforced by concrete and glass block that give the building an industrial appearance. By juxtaposing these elements against the natural setting, the design makes both first-time visitors and lifelong residents sharply aware of the area's innate beauty.

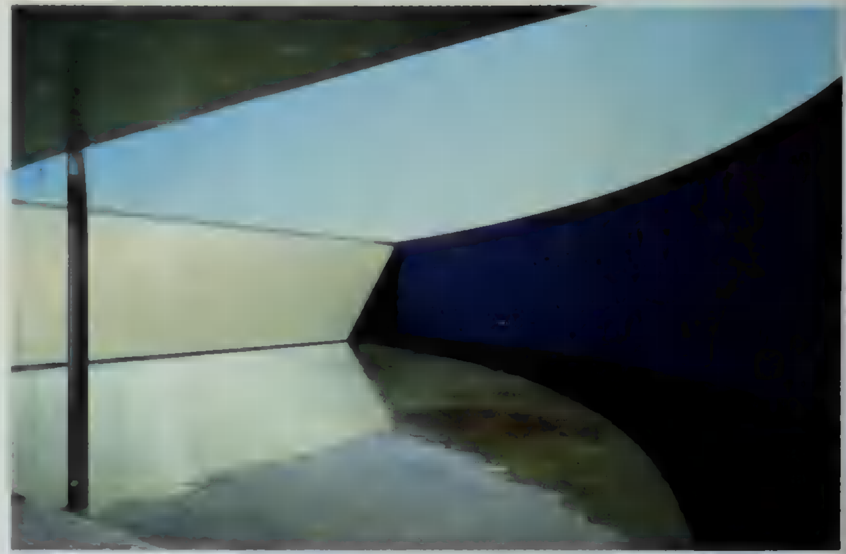
Inside, the reinforced concrete and steel frame structure strikes a balance between protected sanctuary and gateway to the great outdoors. To diffuse the ellipse's inherent centripetal nature, Ito divided the space into six "stripes," which run parallel to the guest room wing and contain the check-in area, restaurant, and offices. Moving from the entrance, which bridges a shallow reflecting pool, to the outdoor terrace with its views of Mt. Shari, patrons lose sight of the curved, concrete wall that all but seals the space inside. Within the ellipse, the hotel's inner workings are separated only by glass "screens" that filter natural light and landscape views from the terrace and courtyard garden. The result is an interior that is at once closed and open, natural and artificial.

While public spaces were kept fluid, the hotel's 26 Western-style guest rooms were located in a 230-foot-long bar for privacy and to guarantee mountain views from every room. Single-loaded corridors faced with glass block mediate the transition between public and private. By cantilevering the hall's second floor slab, Ito enabled the glass block wall to be built as a virtually sheer plane, subdivided only by slender steel bars to resist Hokkaido's gusting winter winds. The opaque glass wall obscures vistas into and out of the hotel, but magnifies subtle changes in light as it filters the sun's rays throughout the day. At night, the wall casts a luminescent green glow against the dark sky.

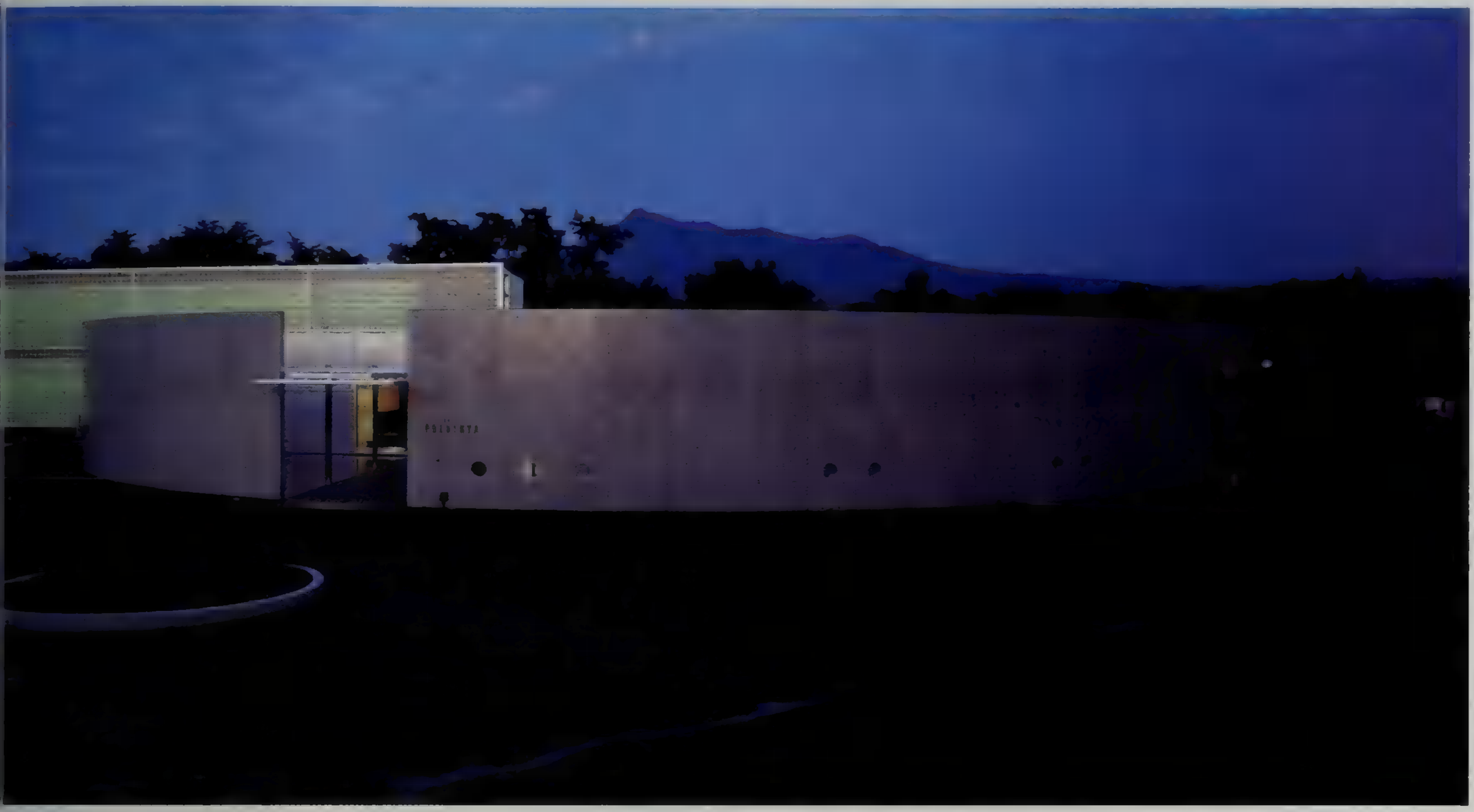
Appropriate to a building so close to the former Soviet Union, the hotel's name was derived from the Russian word *polyinya*—translated as the middle of a white glacier where a pool of unfrozen water remains. Like its namesake, the building resists melding into its surroundings; instead, it stands out against winter's snow-covered plains and summer's green fields like an inviting oasis.
Naomi R. Pollock

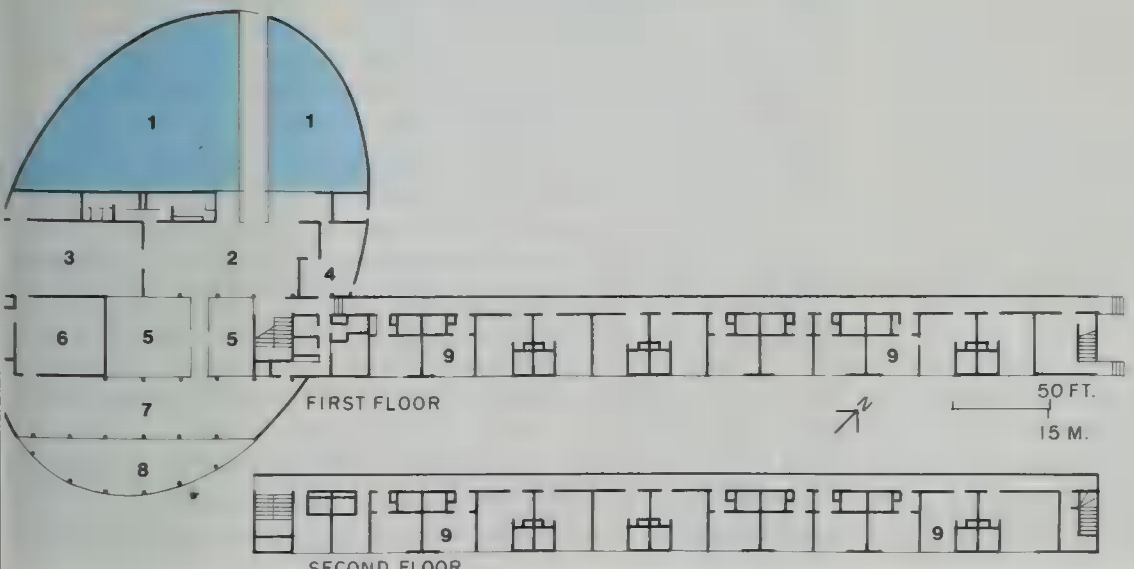
Credits
[illegible]
[illegible] Associates, *Architects*
[illegible] Associates (structural); Kawaguchi
[illegible] (mechanical); Yamazaki Electrical
[illegible] Planners Associates
[illegible] Ishii Gumi and Sankyo Kensetsu

Tomio Ohashi photos



The Hotel's P's public functions are contained in an ellipse, while guest rooms are housed in a linear block (previous pages and top). A canopied "bridge" leads guests from the entrance, across a 2-inch-deep reflecting pool, to a lobby enclosed by an aluminum paneled wall. Interiors are accented by simple furnishings such as the Ito-designed table in the lobby (opposite left). Painted white, the guest rooms are neutral backdrops for mountain views (opposite right).





1. Reflecting pool
2. Lobby
3. Conference room
4. Office
5. Garden
6. Kitchen
7. Restaurant
8. Terrace
9. Guest room

Corrections Architecture Evolves

Recent court orders to relieve prison overcrowding along with record incarceration rates have hit local, state and federal jurisdictions hard, just when financial belt-tightening is the rule. This has fueled a building boom in corrections facilities and caused corrections officials to adopt new types of inmate management that allow inmates to be housed in facilities which are more economical to build. At the same time, much attention has been focused on the development of special facilities for an increasingly diverse inmate population including youth, women, the sick and aged, whose special needs are not accommodated by conventional facilities.

Orders from the courts

In January of 1990, the Status Report of the American Civil Liberties Union's National Prisons Project reported that 40 states plus the District of Columbia, Puerto Rico, and the Virgin Islands were under court order to remedy overcrowded conditions in state prisons. In each case, these conditions were found to violate the Eighth Amendment to the U. S. Constitution, which bans cruel and unusual punishment.

These court orders, along with increased numbers of arrests and convictions, caused state correctional systems to spend $6.8 billion on prison construction in 1991-92, according to the *Corrections Compendium*, a Nebraska-based corrections newsletter, and are expected to spend $5 billion in 1992-93. The decrease in spending is due to funding crises in some states, not necessarily a decrease in need. In some states losses in operating funds have been so severe that brand-new facilities have been mothballed or operated at less than capacity.

Stretching the dollar

Jurisdictions have rethought traditional approaches to corrections to make funding for the construction and operation of jails and prisons stretch further, among them:

- *More specific inmate classification.* It is no longer possible to place every inmate in a maximum-security cell. By more accurately [illegible] the types and numbers of inmates in a given class that a jurisdiction is likely to house once a facility is built, the design of costly over-secure detention facilities can be avoided. Direct supervision jails (below) rely on better inmate classification.

- *[illegible] corrections facilities.* Private facilities are funded by [illegible] can be built without voter referendum, sometimes [illegible] government incurring any debt. Jurisdictions simply [illegible] guaranteeing they will use a facility in exchange for [illegible] of privatizing correctional facilities charge among other things that the corporations running them have an inherent conflict of interest, and might pressure jurisdictions into lengthening prison terms to keep them full. Still, the privatized corrections industry is thriving.

- *Video conferencing.* In the past, some jurisdictions have maintained huge transportation systems so offenders could be bused under guard to and from court. The high costs associated with these systems have prompted some jurisdictions to construct video facilities so that hearings may be conducted by closed-circuit television.

- *Programs that keep people out of prison.* Public and privately operated alternative sentencing options available to judges include intensive supervision, drug testing, electronic monitoring, community service, "shock" camps, community residential centers, and day reporting centers. These, too, rely on more accurate inmate classification.

Direct supervision

No trend better illustrates how correctional philosophy ties together officer-inmate behavior and architectural design than the direct-supervision jail. This type of jail represents an effort to reduce construction, staffing, and maintenance costs through a different style of inmate supervision and facility design that has gained wide acceptance over the past 10 years.

The two more traditional styles of inmate management, intermittent and remote surveillance, share several characteristics. Inmates are locked up where they can't be directly observed most of the time. The periods when they are not under observation is when most vandalism and other trouble occurs. Inmates are locked in cells and officers are isolated from them in secure control stations, except when they are patrolling cells. Tensions run high. Cells and equipment are expected to be heavily vandalized, and so each cell is outfitted with expensive high-security lighting, plumbing, door-equipment, and hardware. The security-control stations are expensive to build and equip.

Under the direct-supervision management style, inmates are allowed out of their cells into common dayroom areas, and are directly in contact with and under the constant supervision of corrections officers. This decreases tensions dramatically, and allows officers to intervene immediately if and when trouble starts. The design of the direct-supervision jail is pod-like, the same as the remote surveillance type, but the equipment, such as light and toilet fixtures, doors, hardware, and furniture is more likely to be high-quality commercial-grade, rather than costly destruction-proof models, which are said

Corrections architecture is active, evolving, with special facilities for the sick and aged emerging as new building types.

actually to have the effect of challenging inmates to destroy them. Jurisdictions that have adopted direct supervision report that not only are inmate-correctional officer tensions eased considerably, but that there is far less facilities maintenance and fewer equipment repairs than in comparable facilities outfitted with high-security-grade equipment operated under traditional management styles. A National Institute of Justice *Construction Bulletin* reported almost five years ago that some $200,000 per 48-bed housing unit could-be saved in construction and equipment costs by adopting the direct-management approach.

Special correctional facilities types emerge

The rise in incarceration rates has brought an increasingly diverse inmate population: women, youth, the elderly, sick, and mentally ill. These special prison populations often need specially designed facilities in order to receive effective care economically. The Federal Medical Center (FMC) at Butner, North Carolina, the first of six new regional hospitals planned for the Federal Bureau of Prisons (FBOP), exemplifies the trend. It will administer medical services to all of these special inmate populations less expensive than transporting patients to community hospitals and keeping them isolated and under guard during treatment. The facility will specialize in psychiatry and oncology and is currently in design development by Odell Associates of Charlotte, North Carolina.

The $85-million hospital's plans call for 306 beds for medical care, including medical, surgical, critical care, women's, and other units. Psychiatric care will include an additional 206 beds. Other prison facilities already exist at Butner, some of which will accept inmates for convalescence after they have been discharged from acute care at the FMC. Provisions are made for a 248-bed cadre unit to house inmates assigned to work in support areas at the hospital.

"I think everyone in our business is trying to contain high health-care cost, not just the costs of transporting and guarding patients," says John Gomberg, project administrator from the FBOP. "We see a cross section of America in prison. A lot of our inmates have drug-related problems, some need dialysis, an older population has chronic problems. We have a population that's HIV positive, a population that has tuberculosis and requires isolation, and we have high-security inmates, too. Still, this facility has the potential to create a significant cost savings and improve health care for a significant portion of our prison population."

The bottom line

"Overall, as bad as things are, I think we've seen a lot of improvements," says architect Kenneth Ricci, of Ricci and Associates, whose corrections practice concentrates on counties and the smaller states. "We've seen the treatment movement of the 1960s, the development of prisoners' rights law and voluntary standards in the 1970s, and unfortunately, we've seen the overcrowding of the 1980s and early 1990s. But that is evolution and that is positive.

"A lot of architects did not like corrections. They thought the architect was a tool of oppression. I don't feel that way. I've been in enough prisons, I know how bad they can be. But as architects, we're attempting to bring sensitivity to user needs, whether the user is the correctional officer or the inmate. Both types of users need to feel a sense of security. We're saying that the public as well as the user has an interest in design, that the facility should be both secure- and staff-efficient." *Charles Linn*

For more information

There are a number of excellent sources of information for those involved in corrections facilities design:

The National Criminal Justice Reference Service (NCJRS)
The National Institute of Justice, (NIJ) the criminal justice research arm of the U. S. Department of Justice, maintains the National Criminal Justice Reference Service, a series of specialized clearinghouses that can provide information on juvenile justice, Bureau of Justice statistics, the NIJ AIDS Clearinghouse, and the National Victims Resource Center.

Part of NCJRS is the Construction Information Exchange, a federal initiative that provides information on construction and costs for jails and prisons built since 1978. It publishes the National Institute of Justice *Construction Bulletin*. For more information contact:

The National Institute of Justice/NCJRS
PO Box 6000, Rockville, Md. 20850. Call 800/851-3420 or 301/251-5500.

The *Corrections Compendium* is an excellent source of information on all corrections-related topics, and often includes copiously detailed surveys of corrections activities in all 50 states and the Federal Bureau of Prisons, including information on the amount of money spent bi-annually on prison and jail construction.

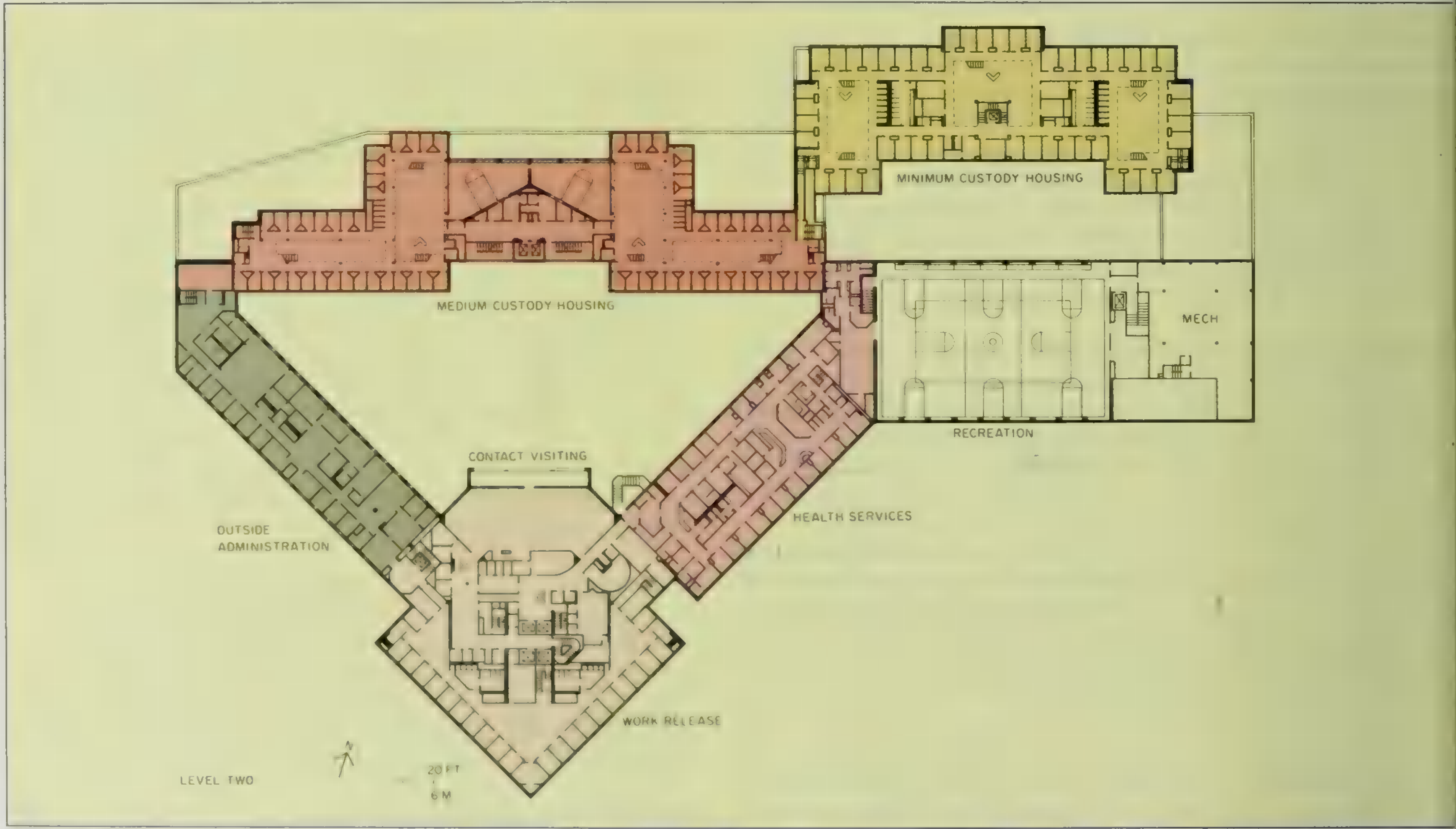
Corrections Compendium, CEGA Publishing, PO Box 81826, Lincoln, Neb. 68501. Call 402/464-0602 for subscription information.

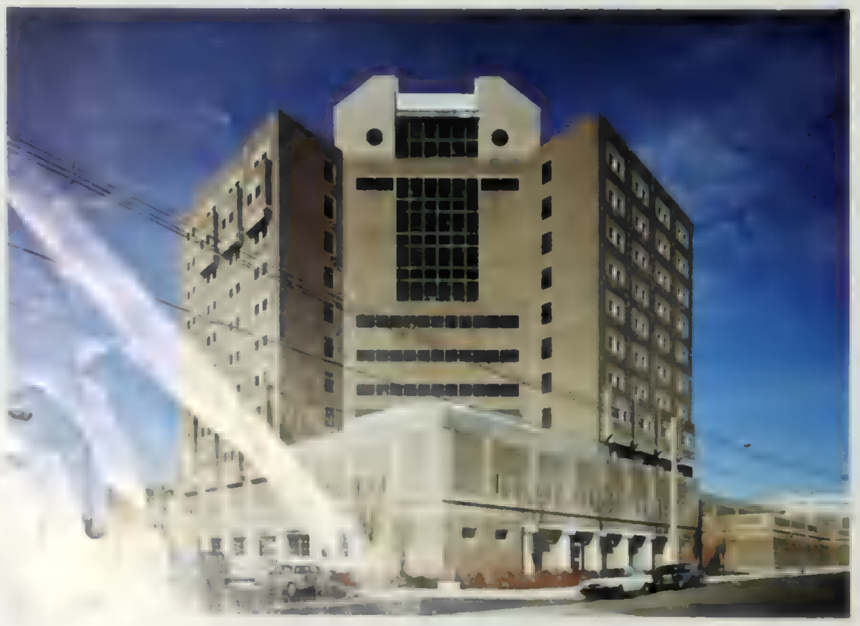
The American Institute of Architects sponsors the Architecture for Justice Committee. For further information about the committee, call Todd Phillips, staff director, 202/626-7366. ■

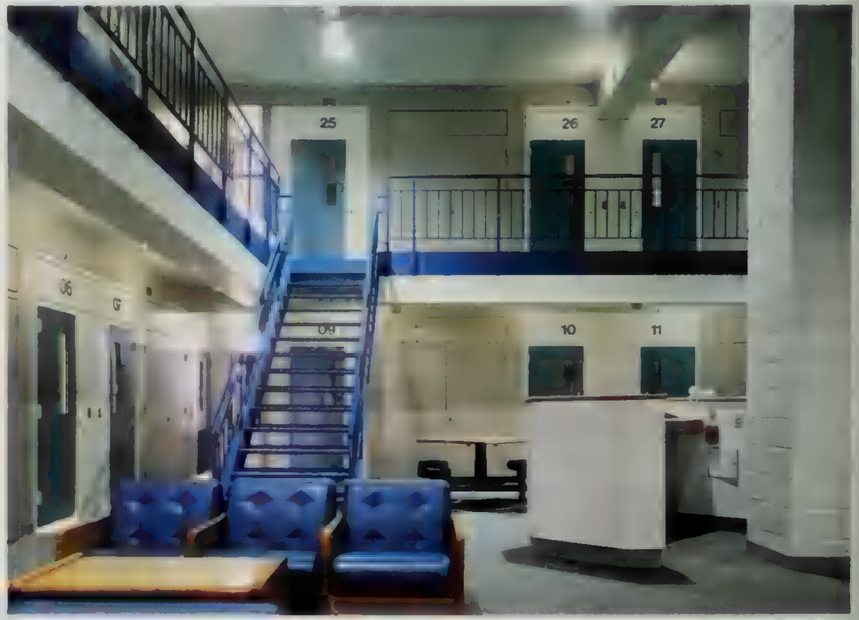
Suffolk County House of Correction

Boston, Massachusetts
The Stubbins Associates, Architect

Replacing Boston's 90-year-old Deer Island facility is the 420,000-square-foot, $110-million Suffolk County House of Correction, a direct-supervision prison on 7 1/2 acres in South Boston. The Stubbins Associates's concept was to maximize use of outdoor space by interweaving housing with exercise fields. The result is a campus of seven buildings arranged to make courtyards. Programmed for 824 beds, the facility has separate zones for minimum-, medium-, and maximum-security confinement; housing groups are larger for the more lenient classification. Housing for minimum- and medium-security inmates, who make up the bulk of the population, is along the site's north edge, forming a rusticated precast-concrete perimeter wall.







Grouped around communal day rooms (plans below and opposite) are individual cells set 20 feet above grade. The cells are 16 feet by 16 feet or 16 feet by 20 feet. Windows are in pairs vertically and horizontally to create "a public scale." An 11-story tower accommodates intake, special observation, disciplinary detention, substance-abuse treatment, and protective-custody requirements; the assignment of upgraded permanent housing is based on inmate behavior. Drug-treatment and medical facilities, particularly for inmates with AIDS, have been expanded since the project's completion.

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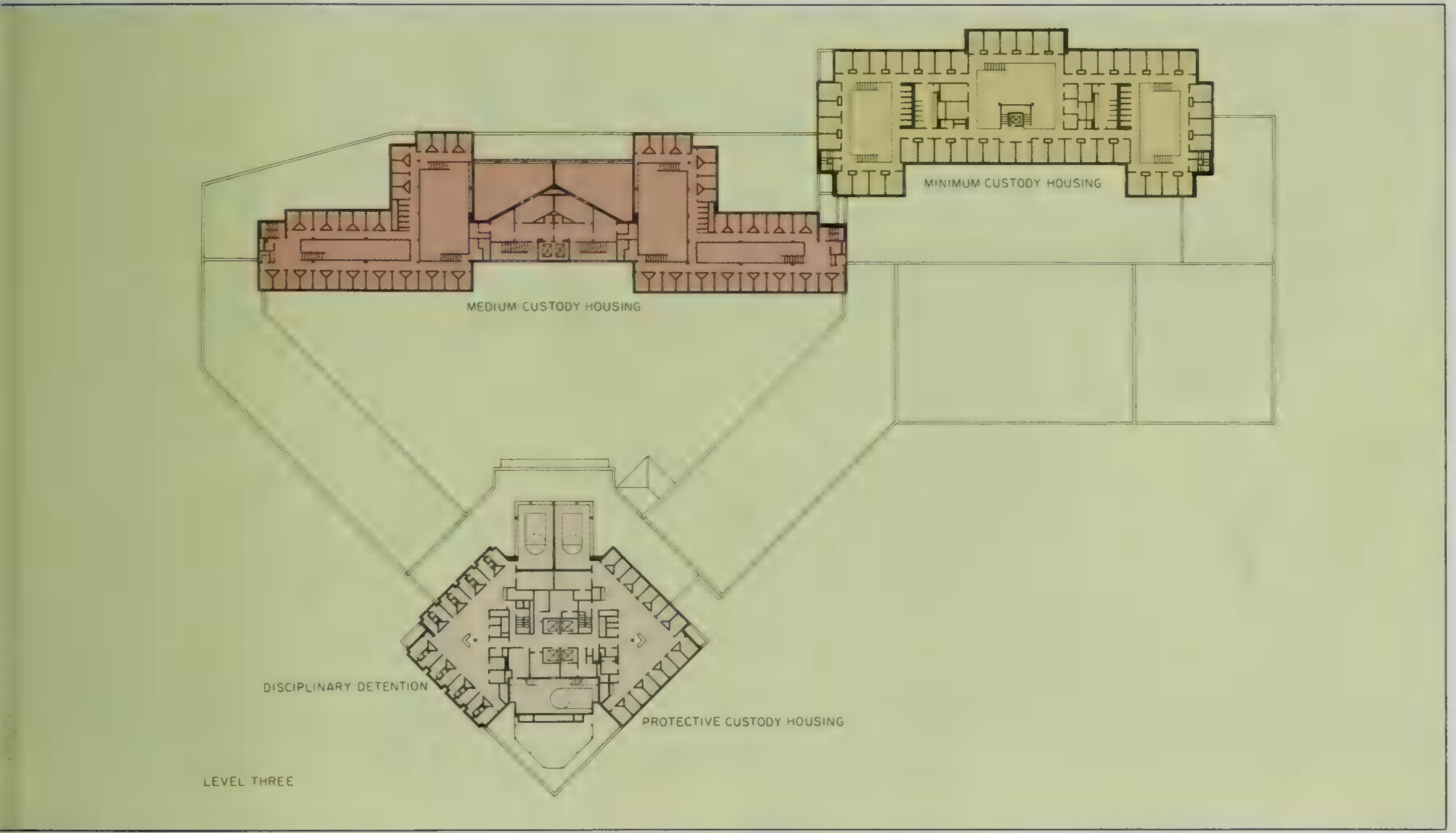


Credits
Suffolk County House of Correction
Boston, Massachusetts
Client: *Division of Capital Planning and Operations, Commonwealth of Massachusetts*
Architect: *The Stubbins Associates—W. Easley Hamner, principal-in-charge; C. Ronald Ostberg, project designer; Roy A. Pedersen, project architect; Peter Blewett, technical coordinator; Patrick McCarthy, production coordinator; Michael Gilligan, landscape director*
Engineers: *LeMessurier Consultants (structural); Syska & Hennessy (mechanical/electrical); Bryant Associates (civil); Haley & Aldrich (geotechnical)*
Consultants: *James H. Webster (correctional facilities planner); Buford Goff & Associates (security); Cerami Associates (acoustical)*
General Contractor: *The George Hyman Construction Company*

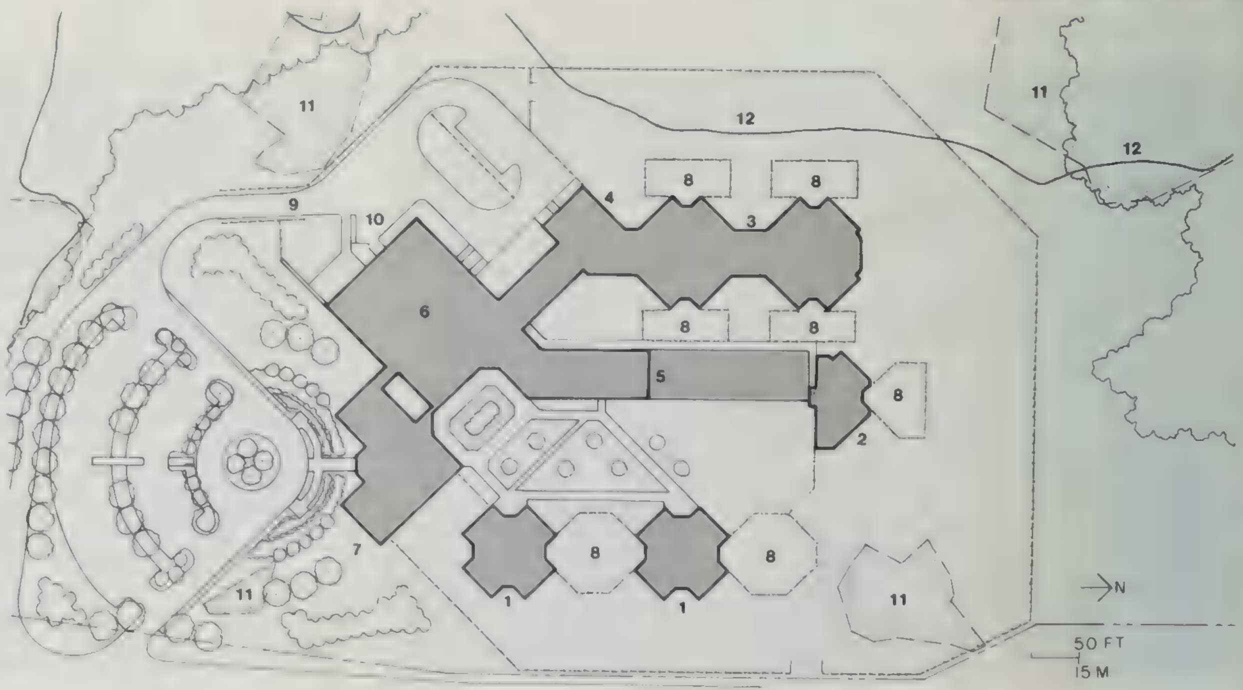
Women's Correctional Institution

New Castle, Delaware
Tetra Tech Richardson, Architects
Grad Associates, P.A.,
Associated Architects

This 120,000-square-foot complex occupies seven buildings on a 14-acre site. One of WCI's missions is to boost inmates' self-esteem by means of counseling, education, and job training. A video hookup with a local community college will provide courses-for-credit. Since the average inmate has two or more children, family counseling is stressed. There are two overnight suites to allow children occasionally to spend the night with their mother. The costliest areas of WCI are the cores, which were developed for 400 inmates, twice the initial population, to allow for expansion. Cost-per-bed nevertheless stayed within the national average for prisons. Early occupancy was essential, and the entire facility was completed in the 18

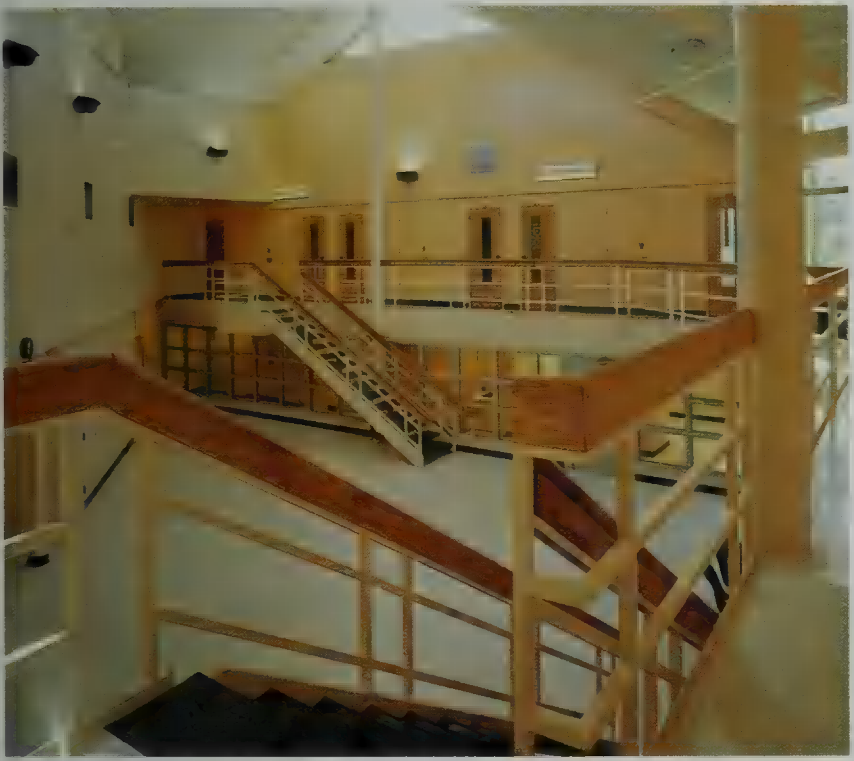
Hugh Loomis Photography

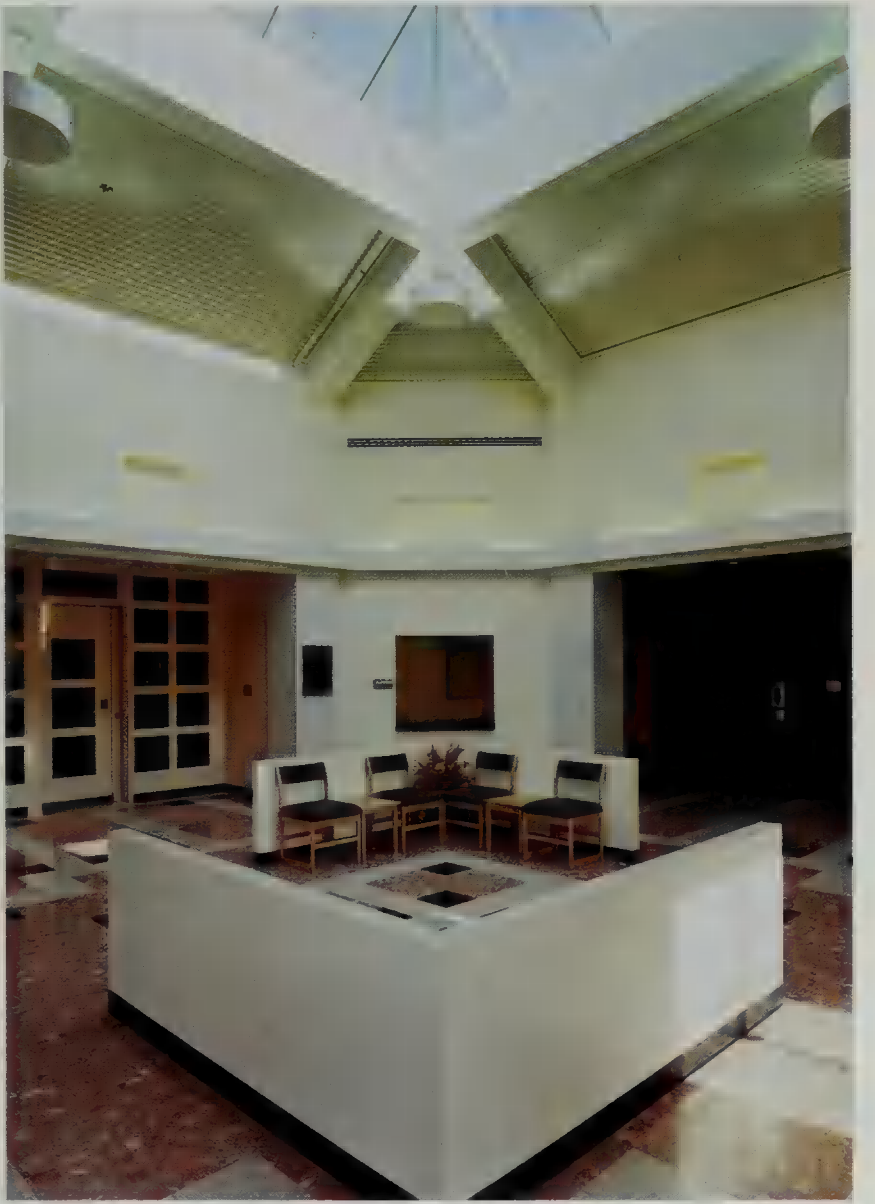
1. *Minimum-security housing*
2. *Medium-security housing*
3. *Pre-trial housing*
4. *Medical/dental intake*
5. *Educational/vocational*
6. *Support services*
7. *Administration*
8. *Recreation yard*
9. *Sally port*
10. *Service area*
11. *Wetlands*
12. *Flood plain*

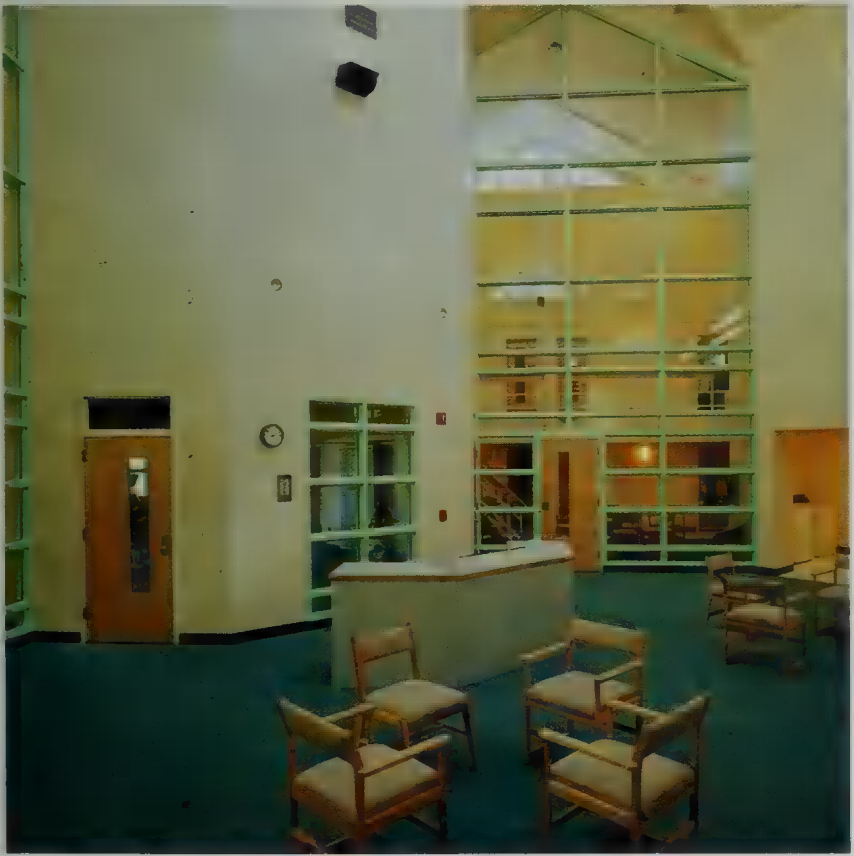


months it typically takes merely to do the programming and design. The complex is both a prison and a jail, and since the two populations may not mix, circulation was a challenge, especially with shared use of core areas. The solution exploited WCI's geometry, which allows for cost-effective, separate, unduplicated circulation. To enhance the "learning" over the "prison" feel, razor-ribbon fencing was eliminated, cameras and detection devices made less obvious, steel bars and doors omitted, and minimum-security inmates have keys to their cells to allow free movement. *S.A.K.*

Credits
Women's Correctional Institution
New Castle, Delaware
Owner: *State of Delaware Department of Corrections*
Architects/Engineers: *Tetra Tech Richardson*
Associated Architects: *Grad Associates, P.A.*
Engineers: *Joseph R. Loring & Associates (mechanical, electrical)*
Consultants: *Carter Goble Associates, later Scarlett Carp & Associates (programming); Zaralban & Associates, Inc. (food service); Arnold Goldberger (security systems); Healy Management Services, Kitchell CEM (construction management)*







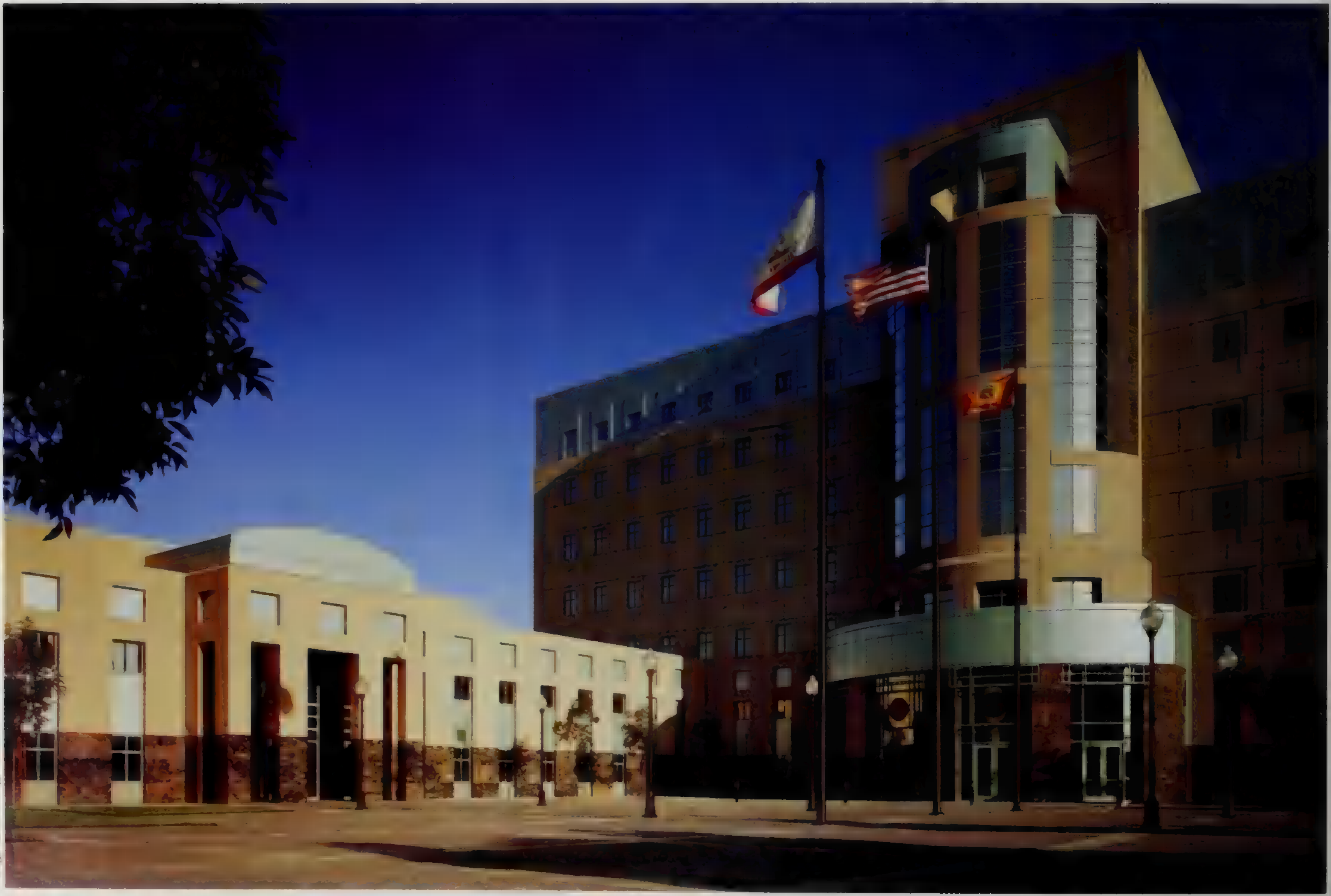
Smallness of scale marks the main entrance for visitors and staff (opposite). This informal, environment is seen in the main lobby (above), the dayroom in the chronic-care unit (top left), and a cluster commons in the minimum-security housing unit (left). The security system was stretched to provide monitoring, safety, and containment of inmates.

Exterior materials consist of ground-stone faced concrete block and precast concrete, with metal siding and a metal standing-seam roof.

Betty Lou Lamoreaux Juvenile Justice and Family Law Center

Orange, California
EKONA, Architecture + Planning, and
Dan L. Rowland & Associates, Architects

A set of three buildings linked together, this juvenile justice center combines courts, administrative offices, and detention facilities. The design of the 300,000-square-foot complex reflects the progressive ideas of Betty Lou Lamoreaux, the retired juvenile-court judge who not only gave her name to the project but was an important participant in the programming and design process. Along with representatives from the county's General Services Agency, the juvenile courts staff, the probation department, and the maintenance department, Lamoreaux called for a justice center that would provide a humane environment for young offenders while at the same time impressing them with the gravity of the law. The resulting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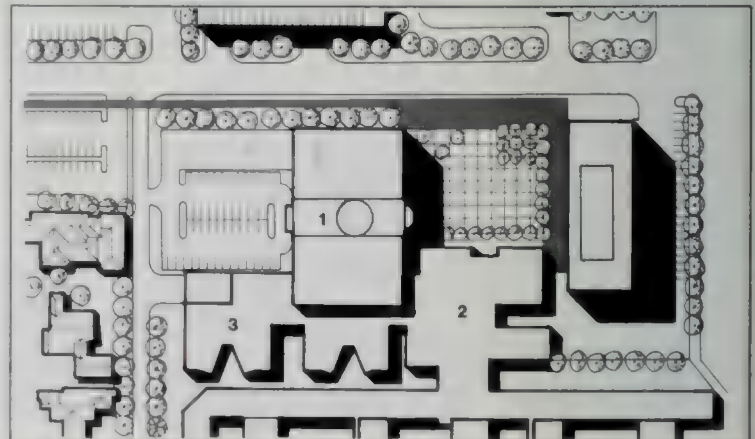
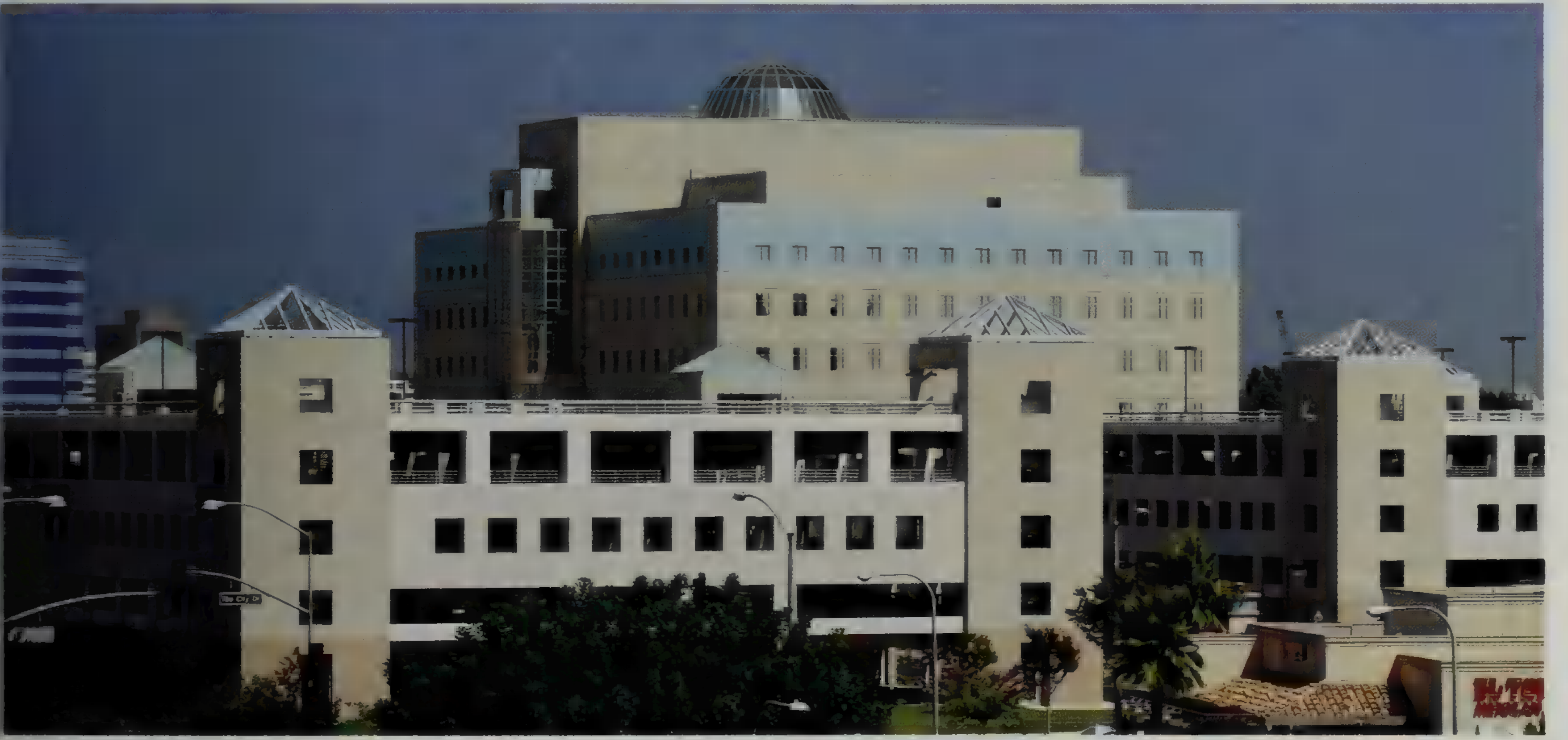
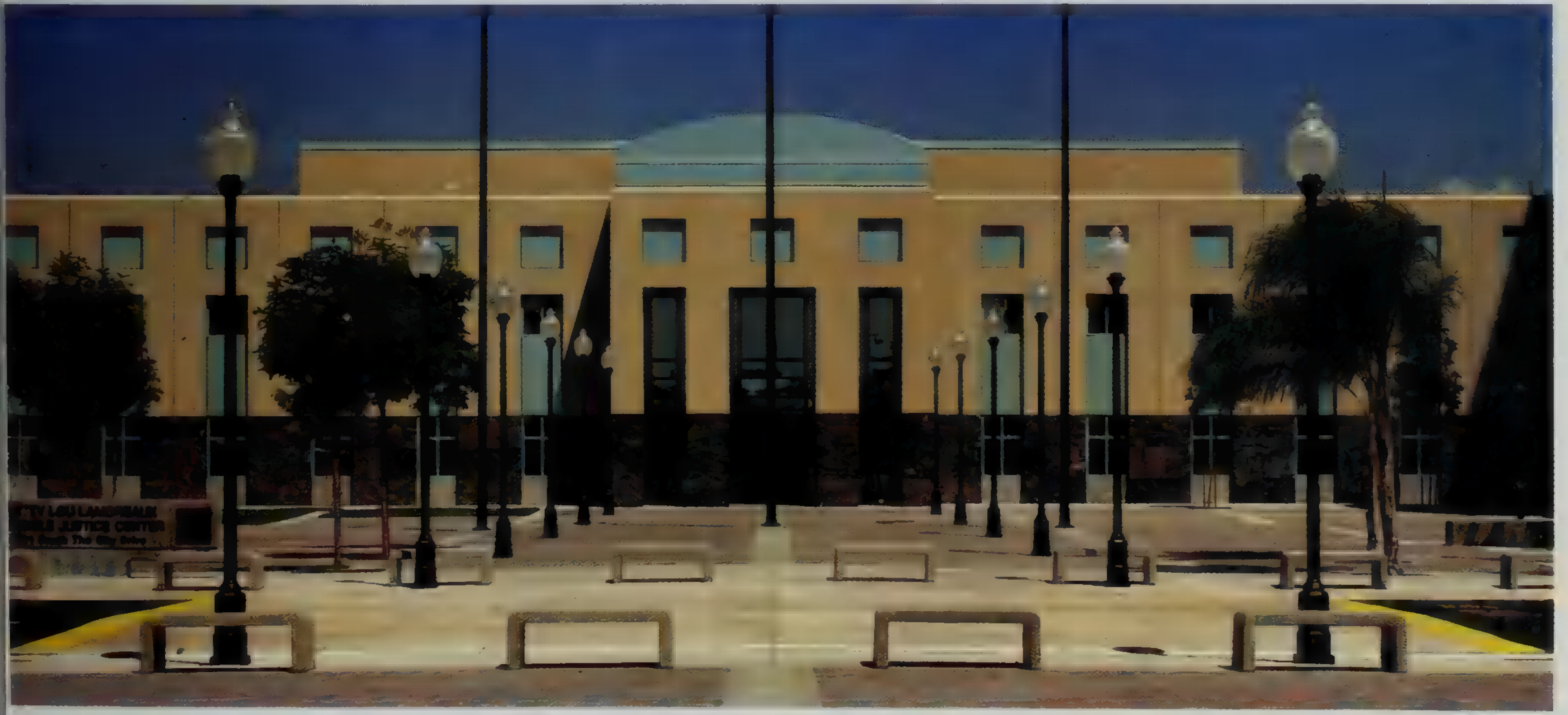
1. Courts building
2. Administration building
3. Intake building

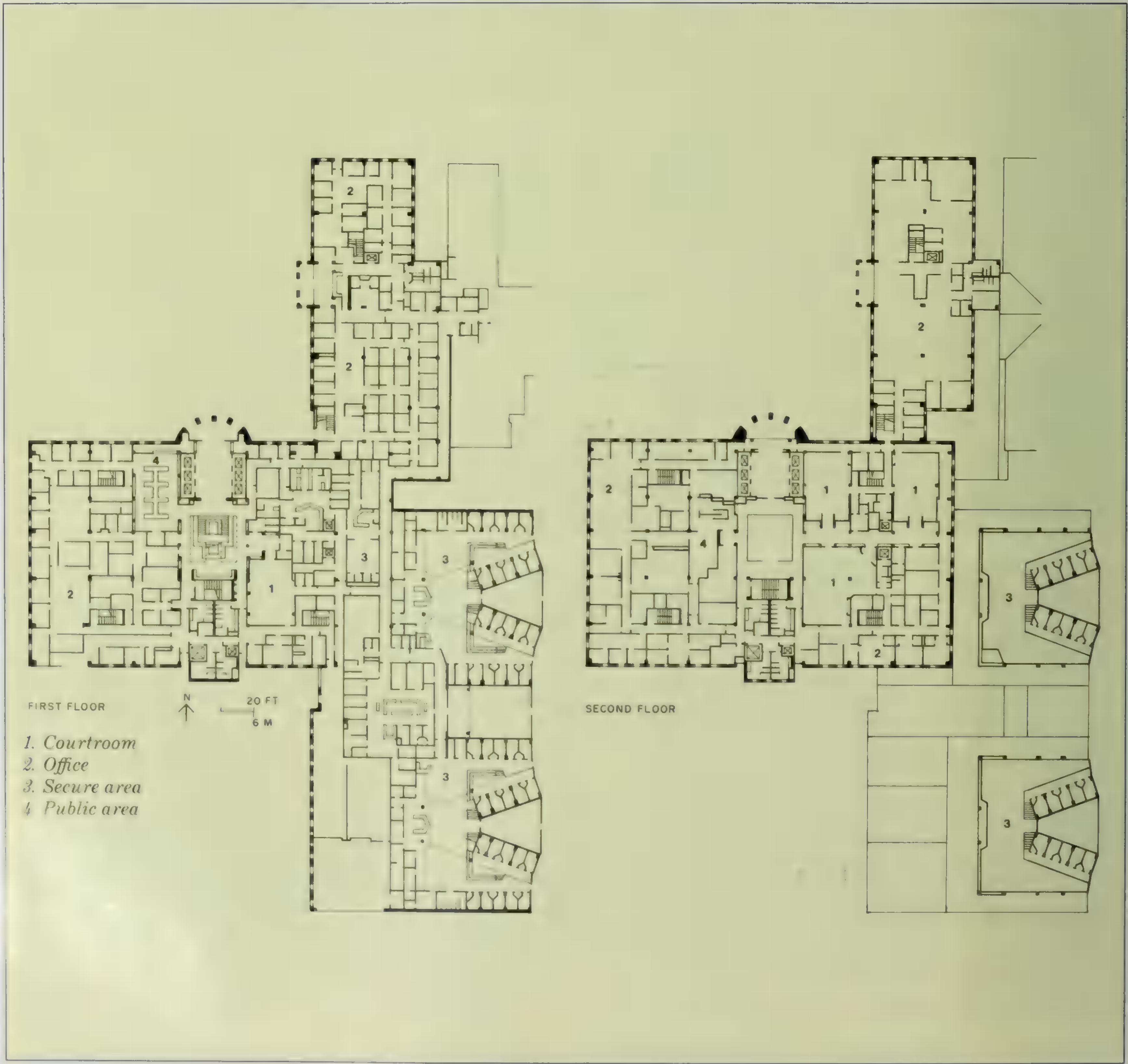


buildings combine light-filled interiors with a strong civic presence. Faced with an unexceptional suburban site with an existing six-story government office building and an old juvenile-detention facility, the architects used the new buildings to form a public plaza (opposite and bottom) that helps organize the complex and gives it a sense of place. Anchoring this plaza is the new seven-story courts building (on right of photo, opposite) whose dome-topped central rotunda announces its function as an important civic facility (below). Defining an adjacent edge of the plaza is the new two-story administration building (bottom and on left of photo, opposite) which, like the courts building, has a granite-clad base with stucco above. Tucked behind these public structures is the new two-story intake building where juvenile offenders are processed and held. All of the buildings in the justice center are steel-frame structures with a number of energy-conservation features—including automatic interior-lighting controls, a computerized energy-management system, and a thermal-energy storage system that makes ice during off-peak hours, stores it in underground vaults, and then recycles it as chilled water during the day. Because the justice center must serve several different groups of users—some of whom must be strictly separated from each other—the architects devised three distinct circulation systems: for the public, the accused, and the judges and court





employees. In the courts building, the public enters from the plaza and is oriented by a central seven-story atrium. Judges and the accused enter from the rear of the building through separate, secured sally ports and circulate vertically by means of separate elevators. The building accommodates 15 juvenile courtrooms on the second, third, fourth, and fifth floors, as well as 13 family-law and probate courtrooms on the sixth and seventh floors. To improve communication between judges and make better use of shared support spaces, the architects clustered judges' chambers. The plan also pairs staff office space with courtrooms on each floor, separating the two functions on either side of the atrium. If needs change in the future, some of the office space can be changed into courtrooms. In the intake building, each of two dual-level housing "pods" has 30 cells that can accommodate either single or double bunks. In designing this building, the architects followed the direct-supervision model, in which cells are arranged around a dayroom and unarmed security personnel roam freely among the accused and convicted (opposite). To maintain sight lines, each pod is designed as twin triangles emanating from a central control desk. Wedged between the triangular spaces are outdoor recreational areas. Clerestory windows and polycarbonate glazing around doors to outdoor areas bring lots of natural light into dayrooms. "We wanted to create an environment that



could contribute to rehabilitation," says Christ Kamages, the partner-in-charge-of-design for EKONA Architecture + Planning. According to Kamages, the double pods reduce staffing needs and allow greater flexibility in grouping different kinds of offenders. Materials in the building were selected for durability and ease of maintenance. *C. A. P.*

Credits
Betty Lou Lamoreaux Juvenile Justice Center Orange, California
Owner: *County of Orange, California Board of Supervisors General Services Agency*
Architects: *Dan L. Rowland and Associates and EKONA Architecture + Planning—Randy Bosch, partner-in-charge, administration; Christ J. Kamages, partner-in-charge, design; Tim Craig, project manager; Harry Drake, project architect; Fakoor Popal, project captain; Rolland Alexander, Robert Dollar, Todd Bentley, Robin Burr, Mark Creedon, Peter Hourihan, Patricia Dougherty, Sandra Turnbull, project team*
Engineers: *OLMM Structural (structural); Ludovise and Associates (mechanical/ plumbing); Robert Bein, William Frost and Associates (civil); Toft, Wolff, Farrow (electrical)*
Landscape Architect: *Heimberger Hirsch Associates*
General Contractor: *Gus K. Newberg*
Construction Manager: *Heery/ Vanir*

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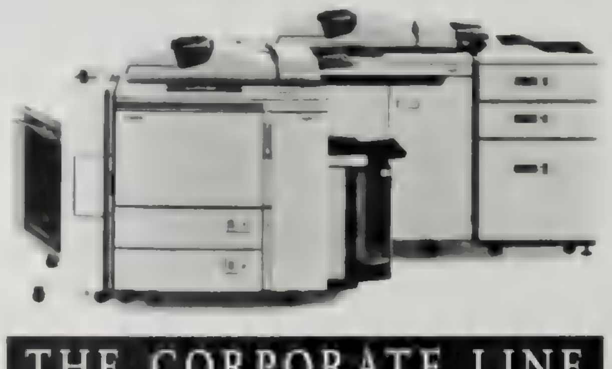
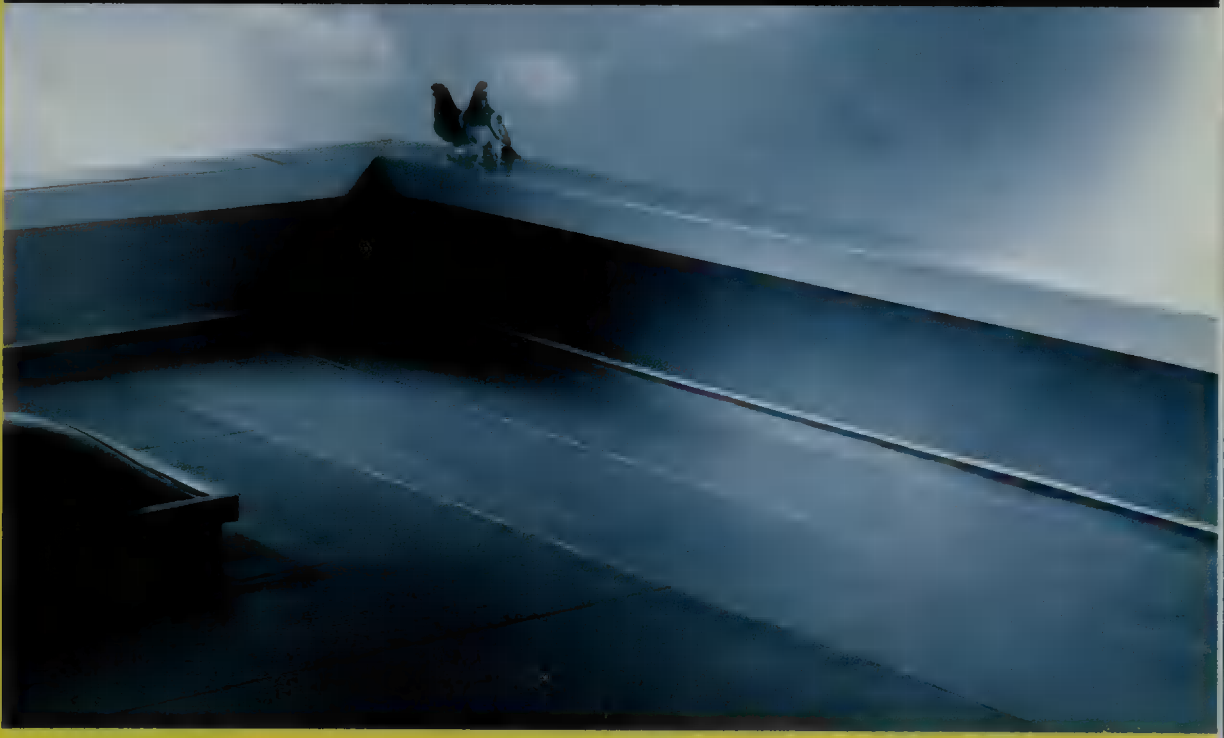


THE CORPORATE LINE

[illegible] Canon Greater Hartford [illegible] Tournament June 24-27 [illegible] CBS (June 26-27)

Canon

Your eyes will have a very difficult time picking up the seams on this roof. Fortunately, so will the wind.



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So, while you may have a little trouble picking up the seams in the photograph above, you'll certainly have no trouble picking up the phone to find out more about Stevens Hi-Tuff/EP. For more information or to arrange for a quote on your next roof, call 1-800/621-ROOF and ask for Ann Duffy.

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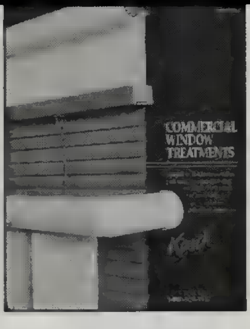
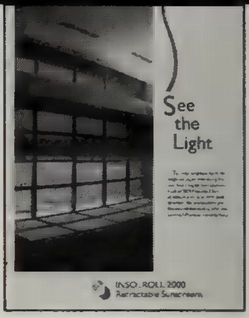
A manufacturer known for schoolroom shades and projection screens now offers Flexshade Systems, a commercial window treatment that allows for almost unlimited flexibility in solar control. Opacity options range from sheer to blackout. Draper Shade & Screen Co., Inc., Spiceland, Ind.

401. Pine and hardwood shutters
A 12-page catalog illustrates custom- and standard-size shutters installed for light control, privacy, and as an architectural-design element, and highlights recessed louver-bar and zero-clearance styles. Window treatments are proportioned to fit the requirements of each application. Pinecrest, Minneapolis.



402. Commercial installations
The Kirsch window-treatment product line includes vertical and horizontal blinds; roller shades in cotton cambric, vinyl, fiberglass-laminate, and custom fabrics; and drapery hardware and track systems for many applications. Motorized operation is available for any traverse system. Cooper Industries, Kirsch Div., Sturgis, Mich.



403. Retractable solar screen
This sunscreen mounts on the outside of any glass window or patio door, blocking heat before it hits the glass. Alternatively, the mesh-fabric screen can fit on the inside, to filter solar radiation and glare while allowing a view. Operation can be manual, or automated with sun and wind sensors. Insolroll Shutter & Shading Systems, Boulder, Colo.

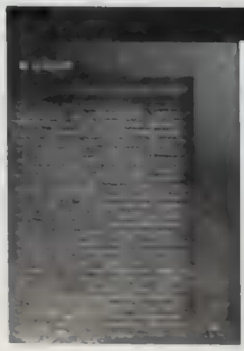
404. Energy-efficient options
An architectural catalog provides data on thermal values, light- and sound-control qualities, and fire retardance for all of this maker's metal, fabric, and honeycomb contract window treatments. A new product is a pleated shade made of integrally fire-resistant fabric. Hunter Douglas Window Fashions, Upper Saddle River, N. J.

405. Shading fabrics
New vinyl-coated polyester and fiberglass fabrics designed for interior and exterior shading of commercial windows are particularly appropriate for large-scale and curved applications. Fabrics come in a range of openness factors. Architectural binder and swatch cards available to specifiers. Phifer Wire Products, Inc., Tuscaloosa, Ala.

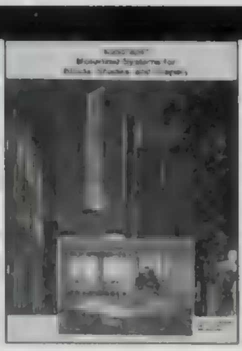
406. Contract windows
A 36-page Bali-Graber catalog gives solar, optical, shading, and fire-resist values for a full line of contract window coverings, including metal and wood blinds, vertical blinds in fabric, vinyl, and aluminum, and pleated and cellular shades. Clear detail drawings demonstrate operation and installation of each style. Springs Window Fashions, Montgomery, Pa.

NEWS FROM
Corporate Acoustic Systems, Ltd.
CAS Introduces Two Exciting New Products: CASwall Partitions & CASblind Verticals

407. Acoustically absorbent
A new custom window treatment, the CASblind consists of individually adjustable vertical vanes of sound-absorbent fabric-wrapped fiberglass. The blind can fit windows up to 10-ft high by any width, and is said to be easily removed and reinstalled for window cleaning. Blind edges can meet or overlap. Corporate Acoustic Systems, Ltd., Poughkeepsie, N. Y.

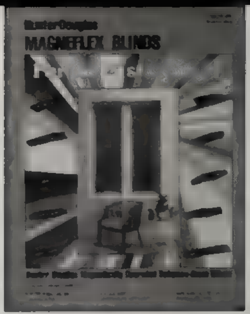


408. Responsive blinds
A 28-page design guide describes window treatments to provide com- [illegible] solar control as well [illegible] light for glare-free [illegible] all year. Control options [illegible] a computer [illegible] optimizes the slat tilt [illegible] response to the [illegible] of the sun. [illegible] Calif.



409. Motorized coverings
Bautex specializes in making window treatments (blinds, shades, roller blinds, and draperies) compatible with headrail drive units. Catalog illustrates complex architectural window treatments, including telescoping-rod technology that can operate shading systems between non-parallel tracks, such as a domed atrium. Bautex USA, Inc., Dallas.

410. Computerized sun screening
Manual, motorized, and electronic shading systems are designed to architectural specifications. An eight-page catalog illustrates applications such as the National Museum of Canada, details the soft-fold Skylighter shade for skylights and greenhouse, and charts openness factors of ThermoVeil shadecloth. MechoShade, Long Island City, N. Y.



411. Between-glass blinds
Brochure describes the Magneflex blind, which can be installed between the panes in hermetically sealed IG units, and details an expanded range of magnetic operators. No outside mechanical connection is needed to operate either horizontal or vertical slats. Sizes up to 60 by 96 in. Custom Glass Products, Salisbury, N. C.

Continued on page 111

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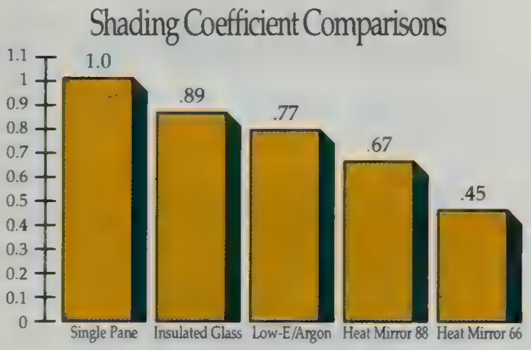

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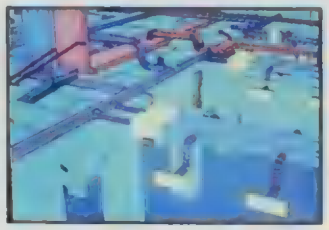

St. Cloud Hospital HVAC design courtesy of Hammel Green and Abrahamson, Inc.

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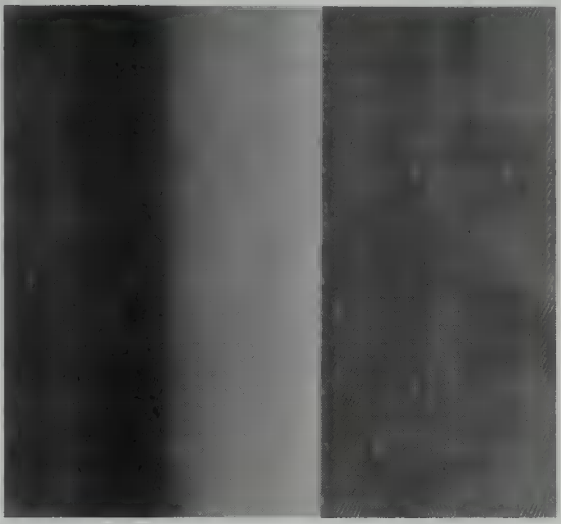

307. Executive option
Although introduced last year as "non-hierarchial seating," the 4 O'Clock task-chair line has now been expanded to include a higher-back model, with a head-cushion effect. Vecta, Grand Prairie, Tex.

308. Silk-blend casement
Based on a 19th-century dress-silk pattern, 86-in.-wide sheers are woven in Italy of a 45/35/20 blend of wool, polyester, and silk. Described as affordable, the draperies have a small-scale repeat in either ivory or gold. Gretchen Bellinger, Inc., Cohoes, N. Y.

309. One-part cantilever
The Visavis chair by Antonio Citterio and Glen Oliver Low simplifies the elements of classic, 60-year-old cantilever seating. Its tubular-steel frame is joined at two points to give the back and seat more flexibility. Backrest is FRP; the chair weighs 19 lb. Vitra Seating, Inc., Long Island City, N. Y.

Continued on page 113

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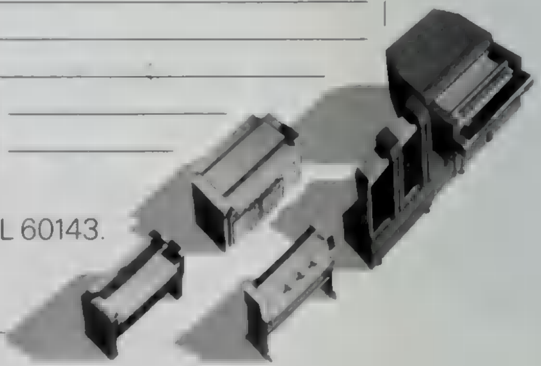

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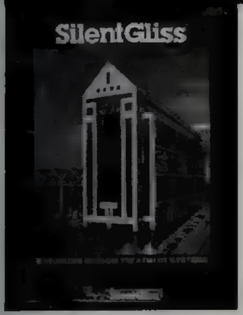
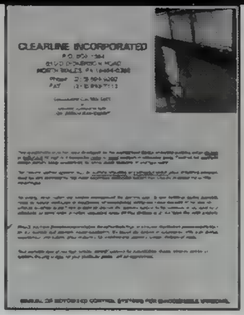


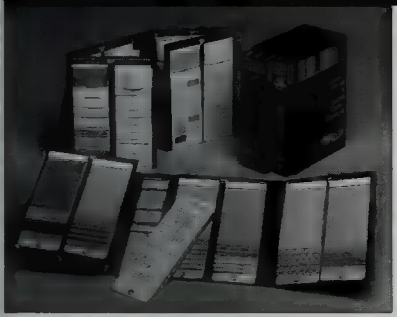


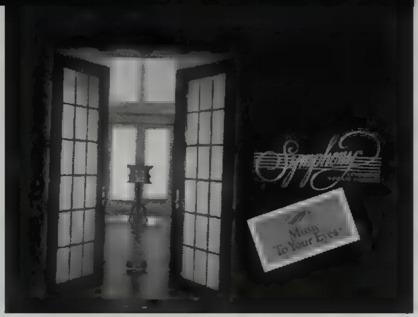
412. Quiet curtains

A SilentGliss catalog explains how this Swiss-designed motorized window treatment offers innovative solutions to complex light-control problems, such as curved-track draperies and heavy-weight stage curtains. Charts match motor option with fabric, blind, or shade types. Silent Gliss USA, Inc., Loganville, Ga.

413. Window-control systems

Data sheets explain devices designed for the operation of out-of-reach windows and vents, such as clerestories high up on a wall. Windows can be opened by crank, chain, or screwjack, operated either by hand or by electric motor. Clearline, Inc., North Wales, Pa.



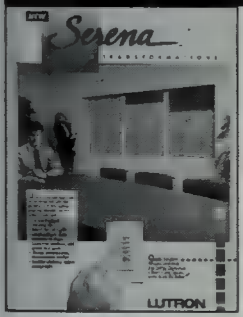


414. Fire-resistant shades

A two-volume sampler contains fire-resistive fabrics and materials for Bali/Graber vertical- and horizontal blinds and pleated-shade window treatments. Appropriate for commercial and institutional applications requiring listed products. Samples are mounted on removable decks that display all color choices. Springs Window Fashions, Middleton, Wis.

415. Cellular window treatments

A brochure illustrates the Symphony shade, a nonwoven double-honeycomb configuration said to offer superior insulating performance. Shades are available in both solid colors and printed patterns, and specialty shapes such as arch-tops and quarter-rounds. Comfortex Corp., Cohoes, N. Y.



416. Automated light control

Serena is an unusual, motorized treatment for windows and walls that contains up to four surface covering materials in a single unit. Electronically controlled shades of different transparencies filter daylight, reduce glare, block unattractive views, insulate glass, and totally block light for presentations. Lutron, Coopersburg, Pa.

417. Interior/exterior shading

An eight-page Sol-R-Veil catalog highlights architectural window treatments installed at the Metropolitan and Guggenheim museums, demonstrating how the different shading materials control heat and glare while retaining daylight and the view to the exterior. Sol-R-Veil, Bronx, N. Y.

Continued on page 115

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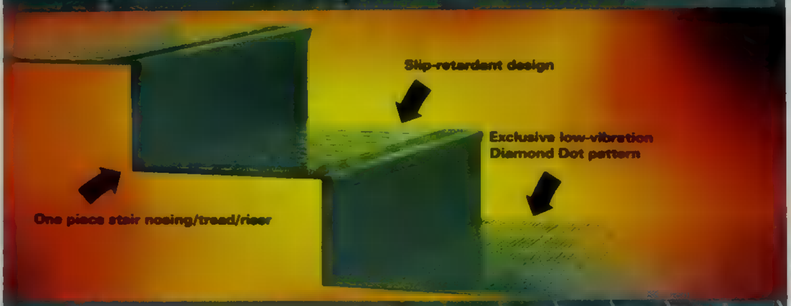
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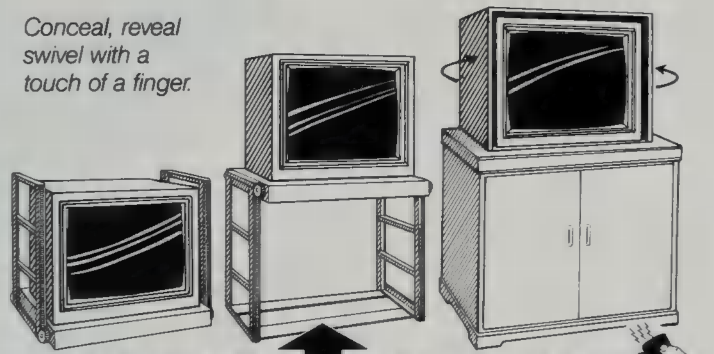

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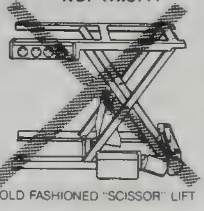

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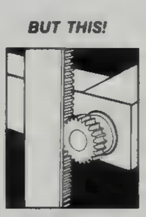

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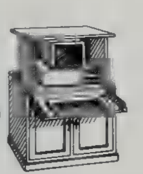

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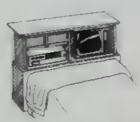

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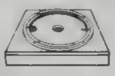

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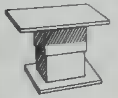
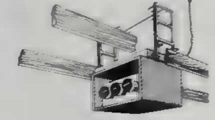


POP-UP TABLE



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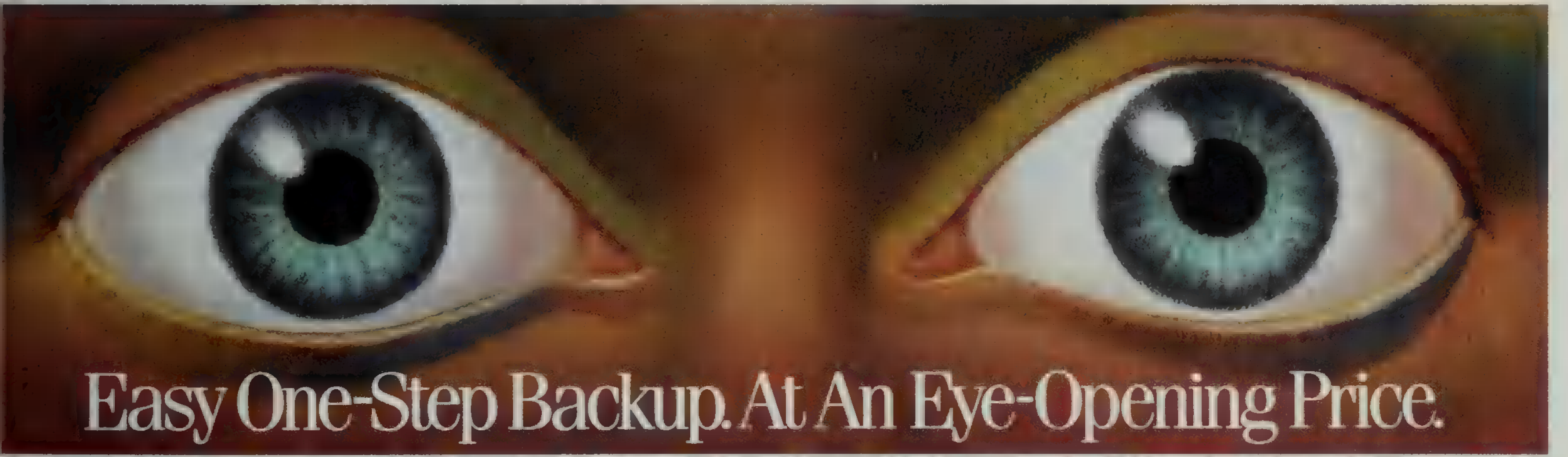
310. Pen-plotter replacement
The DesignJet 650C is a new color/monochrome inkjet plotter said to produce superior-quality D- or E-size plots at pen-plotter prices: the D-size version lists for $8,495. The plotters operate at either final- or draft-mode speeds, suitable for a daily volume of 20+ plots and the occasional 100-plot day. Hewlett-Packard Co., San Diego.

311. Maximum-security acoustic ceiling
The WilSecure ceiling is made of 16-gauge steel to withstand vertical loads of 600 lb in either direction. Its tight joints can't conceal contraband, and the perforated panels, backed with wrapped acoustical blankets, have a NRC of over .95. A new product for this fabricator, the ceilings are made to field measurements, and are said to be economical for this level of security, maintenance, fire resistance, and acoustic requirement. Wildeck, Inc., Waukesha, Wis.

312. Upholstered auditorium seating
Described as offering high-quality comfort at a competitive price, the JG/Ovation chair is built with a double-wall foam-filled molded shell said to be virtually indestructible. Standard features include several spacing options, armrests, counter- weighted tip-up, and a hidden structural hinge. JG Furniture Systems, Inc. Quakertown, Pa. ■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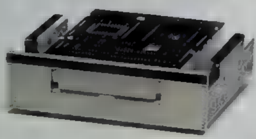

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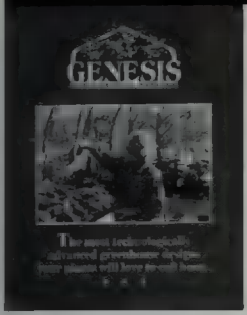
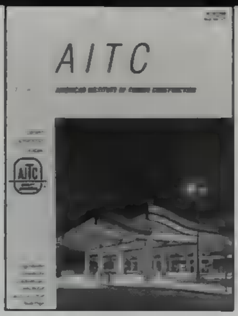
Product Literature



418. Horticulture greenhouse

A full-color foldout illustrates lean-to and free-standing structures built for plants and the needs of both professional and hobby gardeners. Features include tempered clear-glass set in gaskets, not overlapped; continuous-hinged ridge vents; and an extruded-aluminum I-beam frame. Genesis Div., Florian Greenhouse, Inc., West Milford, N. J.*

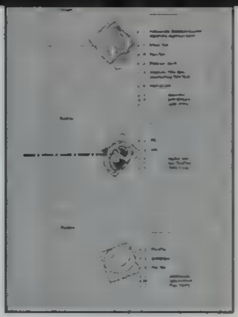


419. Glulam design guide

A 16-page color brochure provides architectural and specification data on load values, details typical connections and anchors, and illustrates a range of applications for structural glued laminated timbers. American Institute of Timber Construction, Vancouver, Wash.

420. Track and field surface

Made in Pennsylvania of recycled materials, the Rugupol track is said to be a completely toxin-free and environmentally sensitive product. Seamless running tracks and courts are tuned to the specific site and sport requirement, with an even, factory-built base and a field-applied wear layer in four colors. Dodge-Regupol, Lancaster, Pa.



421. Workstation tools

An extensive, informative catalog discusses workplace problems such as physical trauma from poor back support and repetitive motion, eye strain, and clutter, and offers products to solve them. Workplace tools include personal lighting, adjustable VDT monitors, and storage items. Details, New York City.

422. Spray-applied insulation

An industry-standard guide to all CAFCO pneumatically-applied products—thermal insulation, fireproofing, and acoustical treatment—is available on ASCII-format disks. Specifications can be integrated with most word-processing packages. No charge. Isolatek International, Stanhope, N. J.*

423. Sunlight-collection system

The Himawari ("sunflower" in Japanese) tracks the sun, and columnates the rays into optical fibers while reducing UV and infrared radiation. The light is then piped, via fiber-optic cable, where needed inside buildings. A brochure suggests applications such as windowless daylight, aquaculture, and gardening. Mitsubishi Corp., New York City. ■

*Product data on CAD disk

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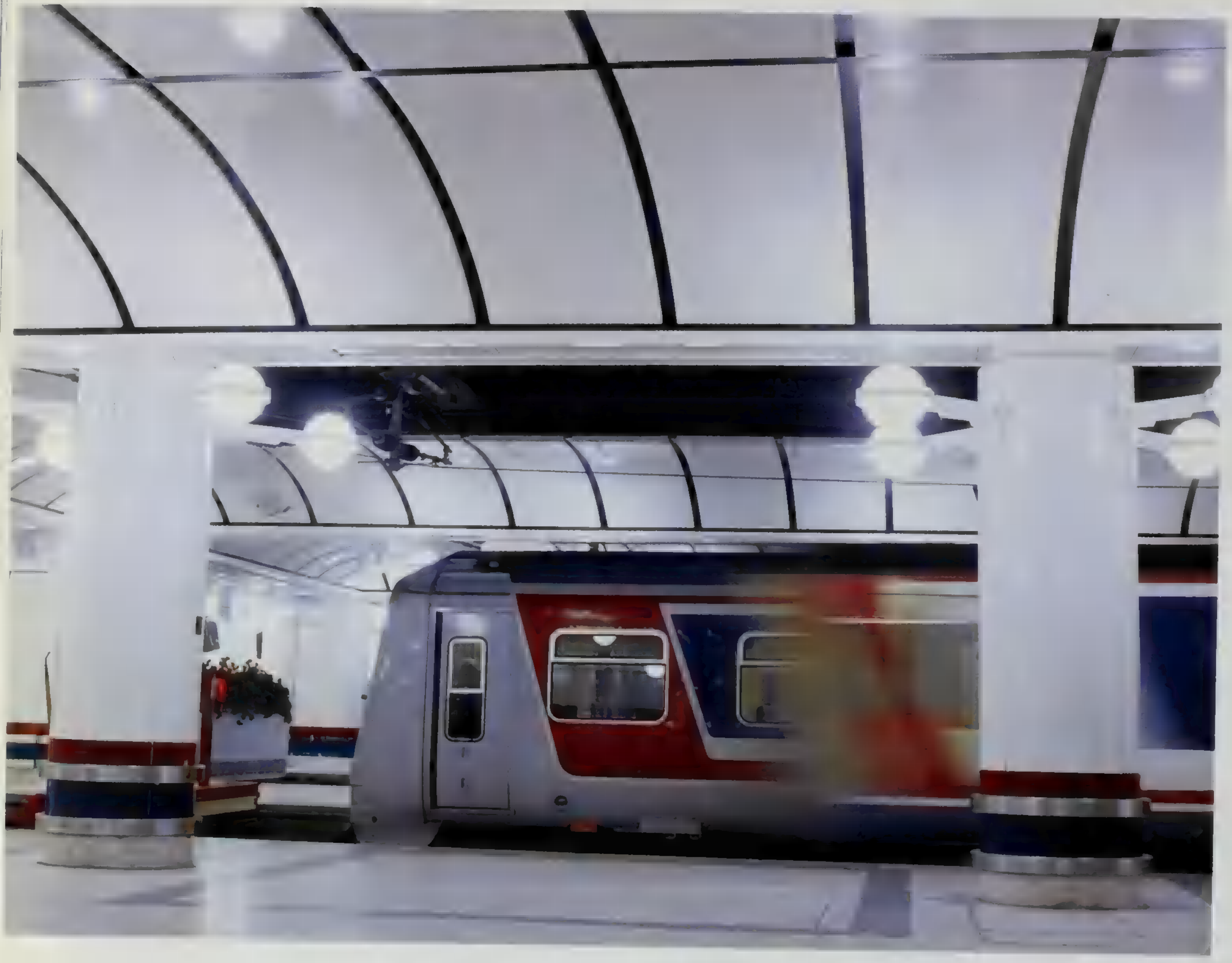

Underground Lining

Alliance Ceramicsteel was the perfect "high-traffic area" material chosen for walls, ceilings, columns, and canopies in this and several other stations. Skidmore, Owings, and Merrill selected white Alliance Ceramicsteel panels with accents of red and blue. Many trains traveling the system also have tough, colorfast Alliance Ceramicsteel interior surfaces.

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Manufacturer Sources

For your convenience in locating building materials and other products shown in this month's feature articles, RECORD has asked the architects to identify the products specified.

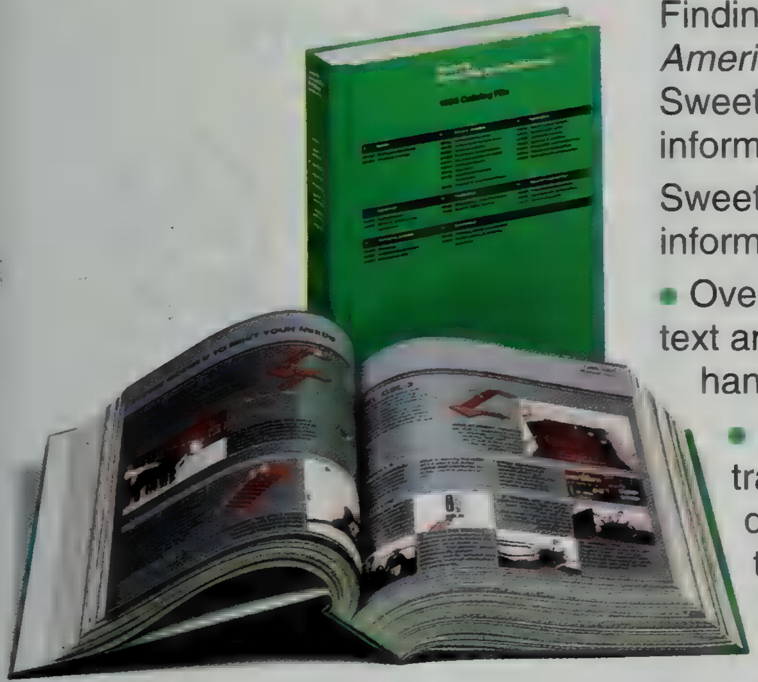
Pages 66-73
United States Embassy
Amman, Jordan
Perry Dean Rogers & Partners, Architects
Stone exterior walls and terrace: Istafina (East Bank North). Stone entrance-surround and windows: Yellow Irbid North, Red Irbid North, Daba's East Bank (Basalt). Exterior wall (insets), interior floor: Daba's Green.

Pages 74-79
Marathon/IBM Building
Montreal, Quebec
Kohn Pederson Fox Associates, Design Architect
LaRose Petrucci Associates, Architect of Record
Curtain wall and entrance: L. B. L., Inc. Aluminum finish: PPG Industries (Duranar XL3). Glass: AFG Glass. Stone: Cold Spring Granite Co. (Rockville White). Galvanized-steel cladding: H. H. Robertson. Pennonid and Stornstead Grey granite: Montval. Revolving doors: F. L. Metals, Inc. Stainless-steel swinging doors: Ellison Bronze Co. Locksets, closers: Sargent. Operators: Dor-O-Matic. Suspension grid: Donn Canada. Integrated ceilings: Armstrong World Industries. Stainless-steel rail: Metal Classic. Reception desk: custom by architect. Ground-floor lighting: Lightolier. Special light fixtures: Louis Baldinger & Sons. Elevators, escalators: Otis Canada, Inc.

Pages 80-87
Fernbank Museum of Natural History
Atlanta
Graham Gund Architects
Brick: Belden Brick. Precast: Castone Co. Coated and frit glass: Viracon; Sunbelt Glass Co. Single-ply roofing: Firestone. Standing-seam roof: Therral-Kizer Roofing. Anodized-aluminum entrance, windows, and French doors: Kawneer Co., Inc. Skylight: Super Sky Products. Hollow metal doors: Engineering Specialties. Hinges: Stanley. Closers: LCN. Locksets, checks, and operators: Corbin. Exit devices: Von Duprin. Fabric-covered walls, ceilings: Decoustics. Ceilings: Celotex. Stained-maple cabinetry: Wigand Co. Paints: Duron Paints & Wallcovering. Special coatings on metal surfaces: Tnemec Paints. Dining-room glass tables and chairs: Knoll. Carpet: Collins & Aikman Co. Uplights (top of columns): National Cathode Co. Pulls: Trimco. Hinges: Stanley. Paving on terrace: Solnhofen Limestone. Wallwashers and torchières: Winona Lighting (custom design). Theatrical ellipsoidal spot lights: Strand Lighting. Lobby floor: Solnhofen Limestone. Downlighting: Edison Price. Stonelook wall treatment: G. W. B. Cutout frieze over entrance: Alucobond Technologies, Inc. Illumination: T B Fluorescent Tube Fixtures. Ticket-booth countertop: Avonite.

Pages 96-97
Suffolk County House of Correction
Boston
The Stubbins Associates, Architect
Curtain walls, aluminum windows: PPG. Precast insulated panels: Pre-Con. Sheet/ballasted roof: Firestone Building Products. Sheet metal: H. H. Robertson. Steel windows, metal and sliding doors: Superior Fireproof Door/Bilt Rite. Tinted glass: Falconer. Entrance door: PPG. Wood doors: Eggars. Rolling doors and grilles: Atlas. Locksets: Yale; Folger Adams. Hinges: Hagar; Folger Adams. Closers: Rixon; Folger Adams. Checks, operators, security devices: Folger Adams. Exit devices: Von Duprin; Folger Adams. Security integration: Shorrock. Suspended ceilings, drywall, and wet plaster: U. S. Gypsum Corp. Workstations: Iaccarino & Sons. Paints, stains, and special coatings: Con-Lux. Special surface finish: Mondoflex. Flooring (wet areas) Bestex. Lobby floor: Slate. Raised flooring (central control): Tate Access Floors. Elevators: Dover.

Pages 98-99
Women's Correctional Institution
New Castle, Delaware
Tetra Tech Richardson, Architects
Grad Associates, P. A., Associated Architects
Entrances: Kawneer Co. Glazing: PPG Industries. Pulls: H. M. Doors and windows: Habersham. Wood doors: Algoma. Locksets: Sargent. Closers: Dorma. Hinges: McKinney. Security devices: Folger Adams. Cabinet hardware: National. Paints and special coatings: Glidden. Ceramic tile: DalTile. Window blinds: Springs Industries (Bali). Masonry: Anchor Concrete Products. Skylights: Super Sky Products. Carpet: Mohawk. Fascia and metal roofing: ATAS Aluminum. EPDM: Firestone. Metal siding: N. A. T. Industries. Stairtreads: Pirelli. ■



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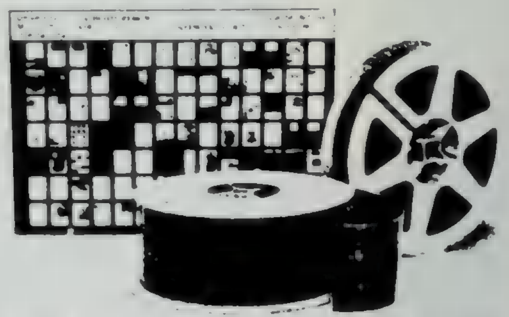

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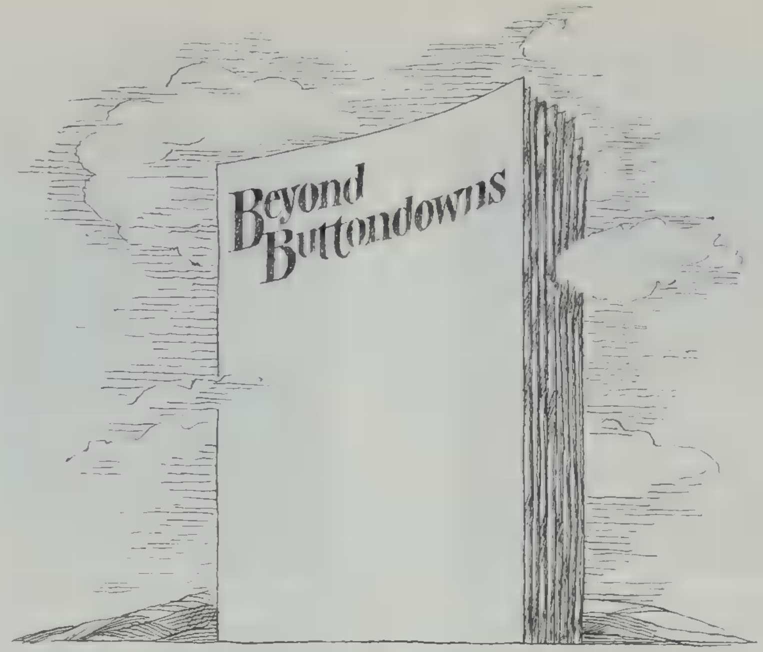

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We call it "Beyond Buttondowns", both to underline its unpretentiousness, and its origin. We're the no-nonsense "cut and sewn" people who've been called King of the Buttondowns, and are known as The Place for Sweaters. So–even though we're now moving up into a wider array of fine clothing, we promise to remain true to our emphasis on *quality* first, then comfortable *prices that denote value*, and seamlessly friendly *customer service*.

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Like our premier issue, our newest "Beyond Buttondowns" features out-sized photos of our expanded shirt and tie lines, with endlessly informative discussions of what they are, exactly, how they got that way, and why they are values.

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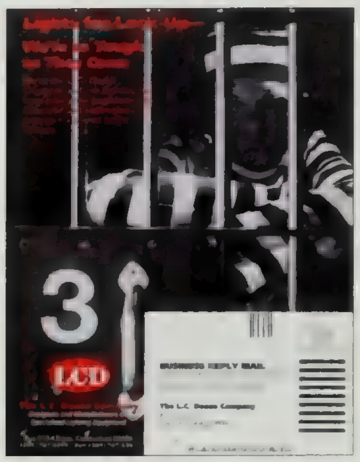
Correctional & Judiciary Facilities Focus

L.C. Doane manufactures Security Lighting



L.C. Doane manufactures security lighting for prison environments. Our fixtures eliminate inmate access, trap contraband & prevent abuse. Features include tamper-proof hardware, clamshell or concealed piano hinges, continuously welded seams, heavy-gauge construction, electrical ballasts (120V, 277V), security glazing, touch control & new hinge-in-house design. Call (800) 447-5006 for product literature. Fax (203) 767-1397.

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The Rotondo Companies

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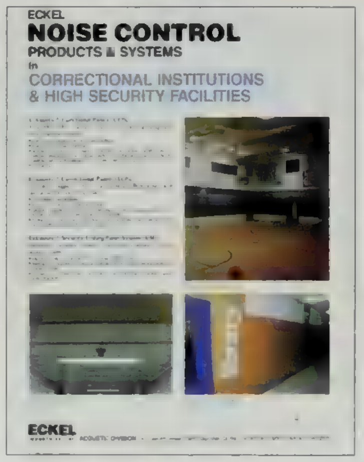

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Eckel Indutries, Acoustic Div.

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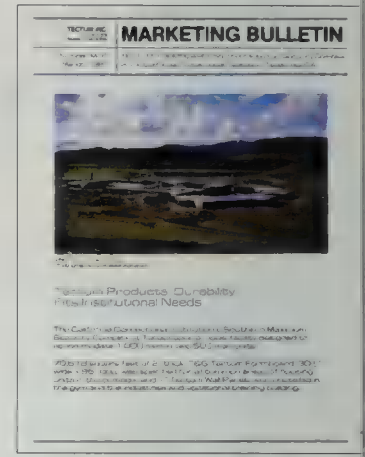

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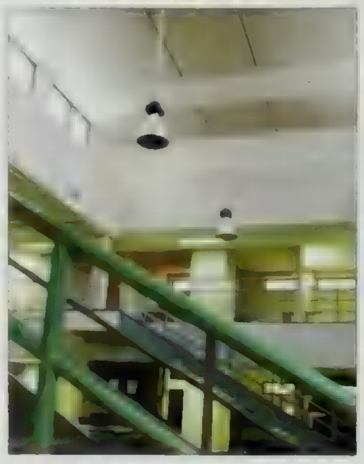

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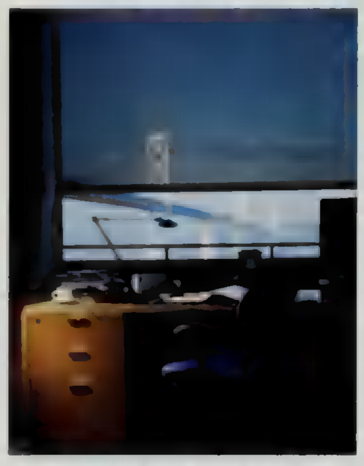

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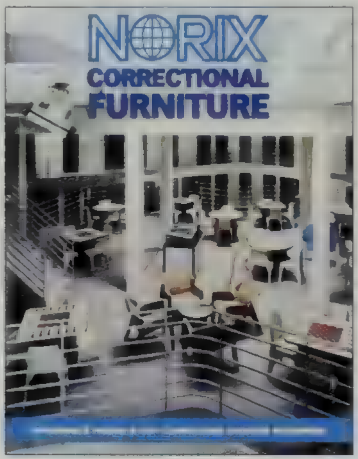

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Dex-O-Tex Corp, Crossfield Products

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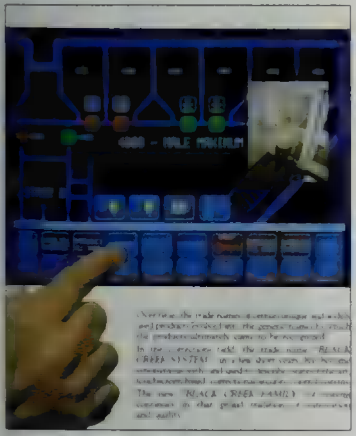

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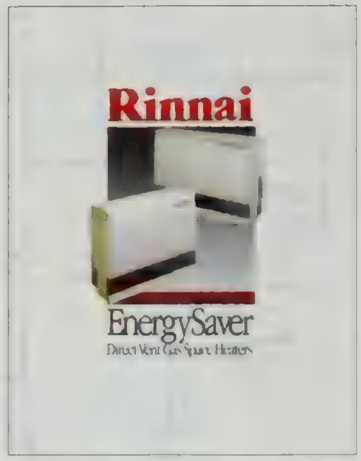

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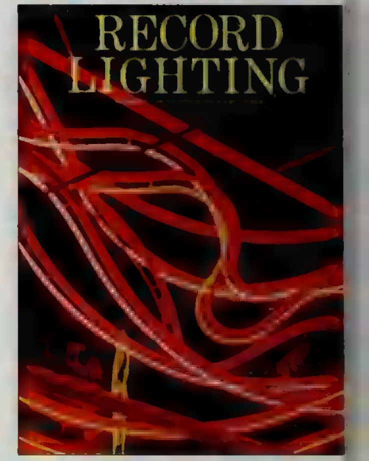

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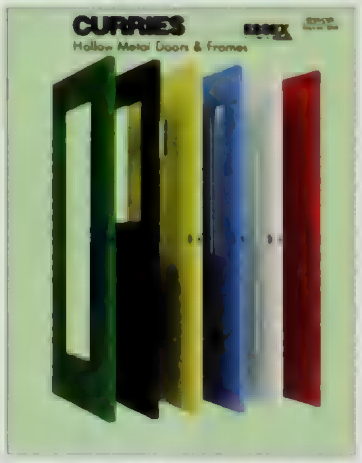

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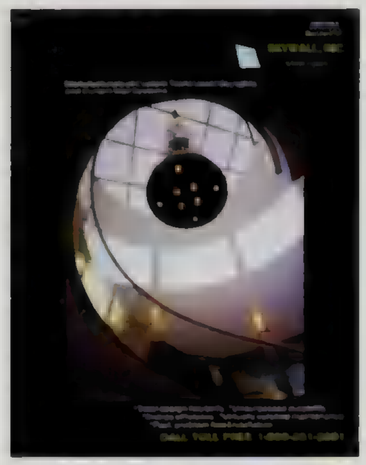

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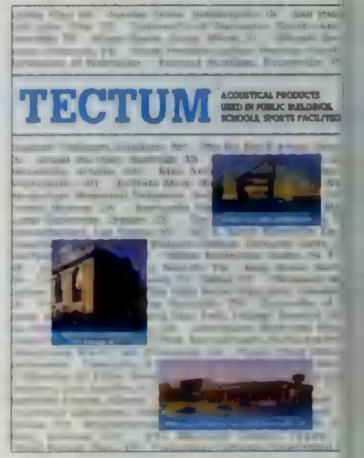
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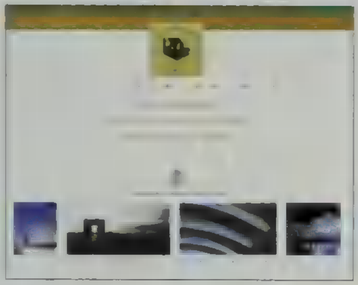

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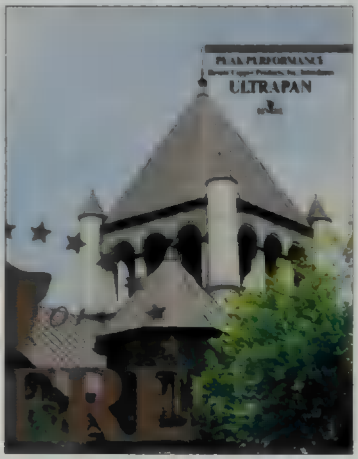

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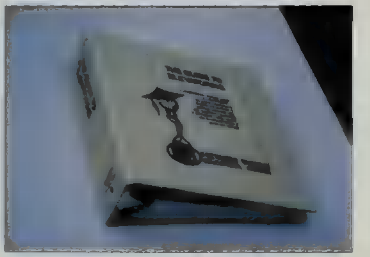

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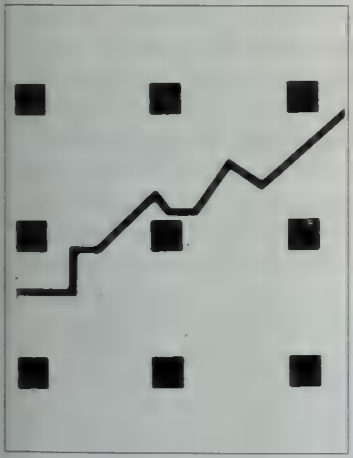

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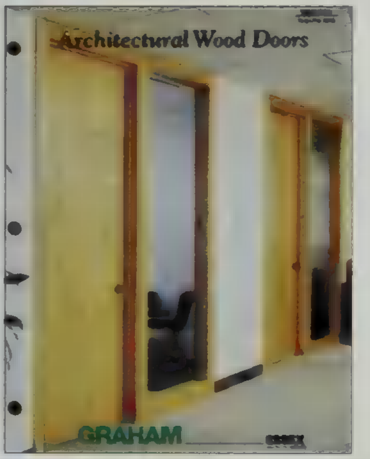

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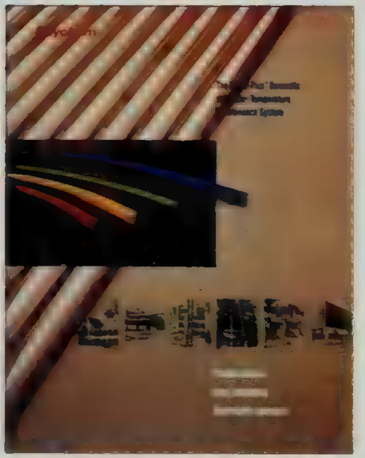

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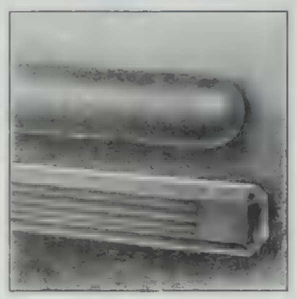

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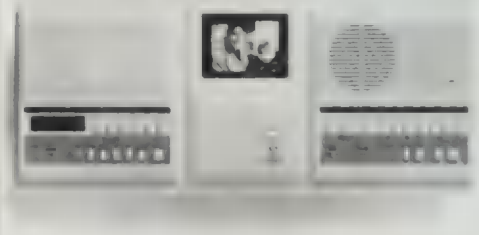

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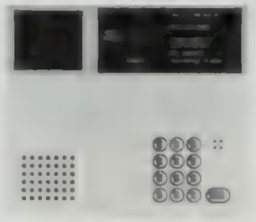

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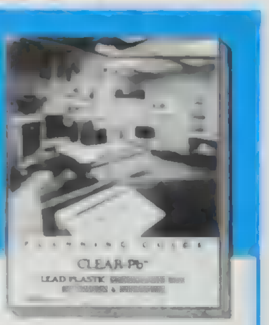

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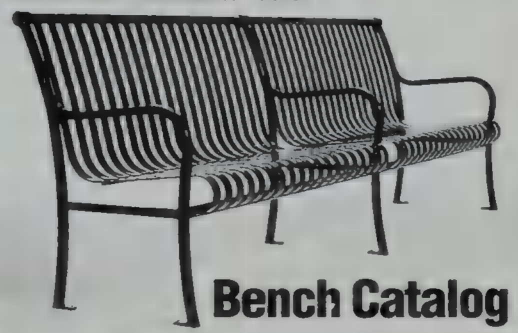

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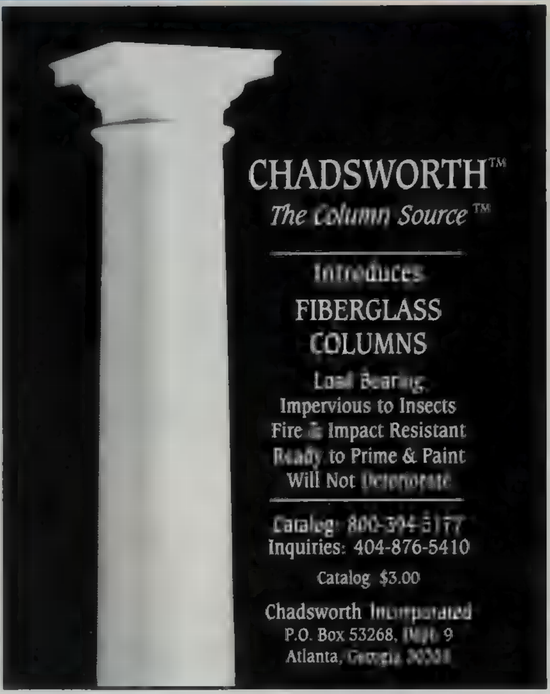

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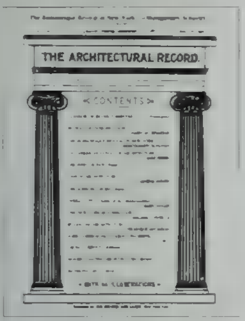

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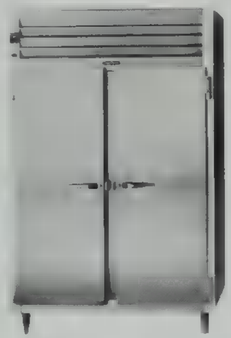

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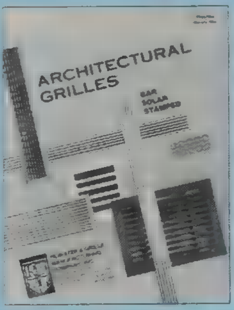

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SURVIVAL OF THE FITTEST

The Hydrel 9000 Series – A New Concept for Survival – Hydreseal Technology

Above, a Hydrel Series 9000 HID in-grade modular fixture, without its housing, operates in an aquarium. Advanced technologies and materials protect its critical light train components from the number one problem in outdoor lighting — water intrusion.

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This results in fixture failure.

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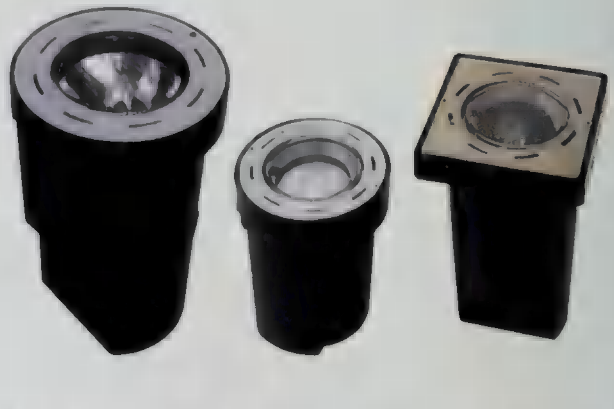
This results in Survival.

Beyond survival, the new Series 9000 is remarkable for its state-of-the-art lighting performance – easy installation and lamping – and modular design versatility.

In addition to In-Grade fixtures, the 9000 Series technology is now available in Hydrel Well Lights, Accent Lights, Border Lights, Wet/dry Lights, and the new Recessed Wall Lights. Contact Hydrel or your local lighting representative.



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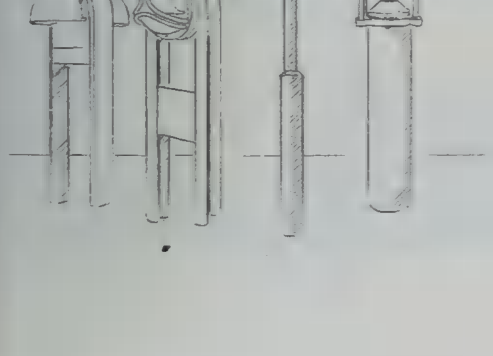

A new generation of lighting design innovated by Louis Poulsen has long last hatched.

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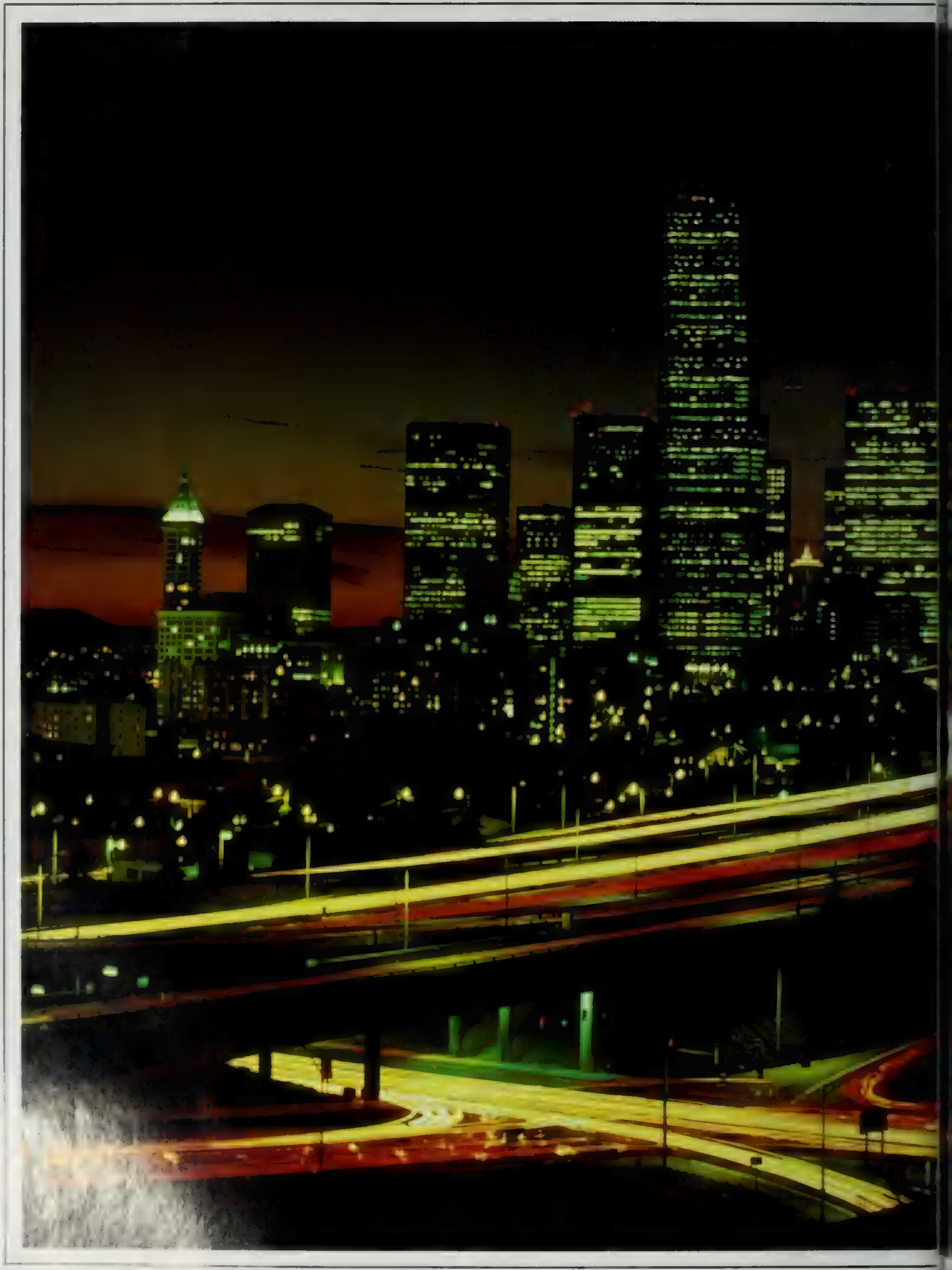
It Took A Little Doing, But We Fin



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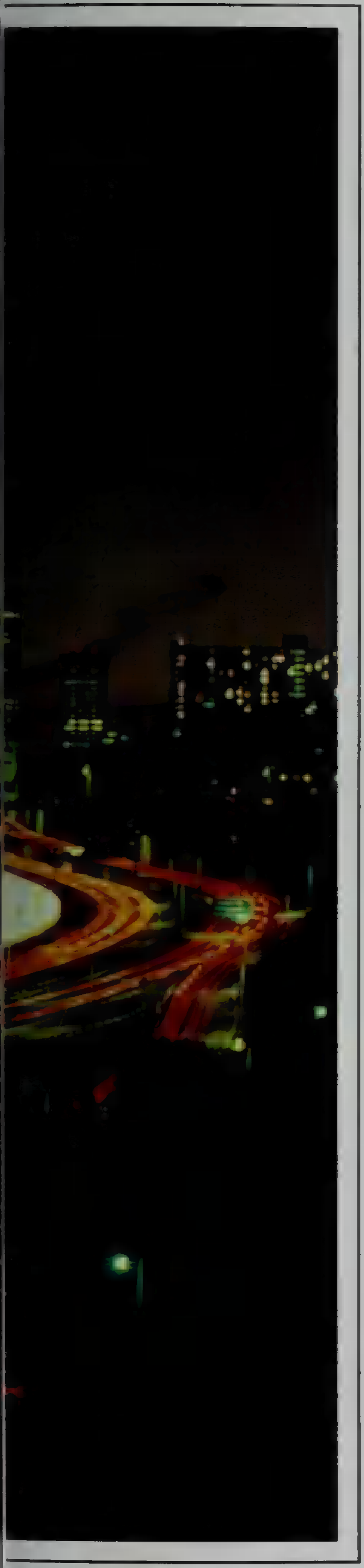

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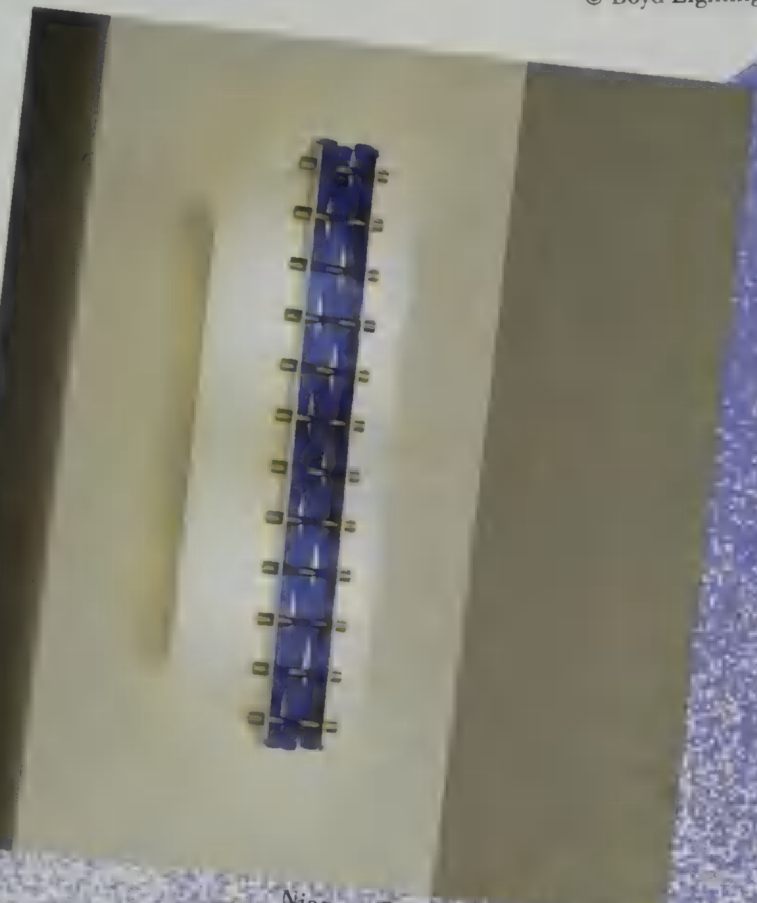

Niagara: Designed by Doyle Crosby

Eclipse: Designed by Gary L. Cross

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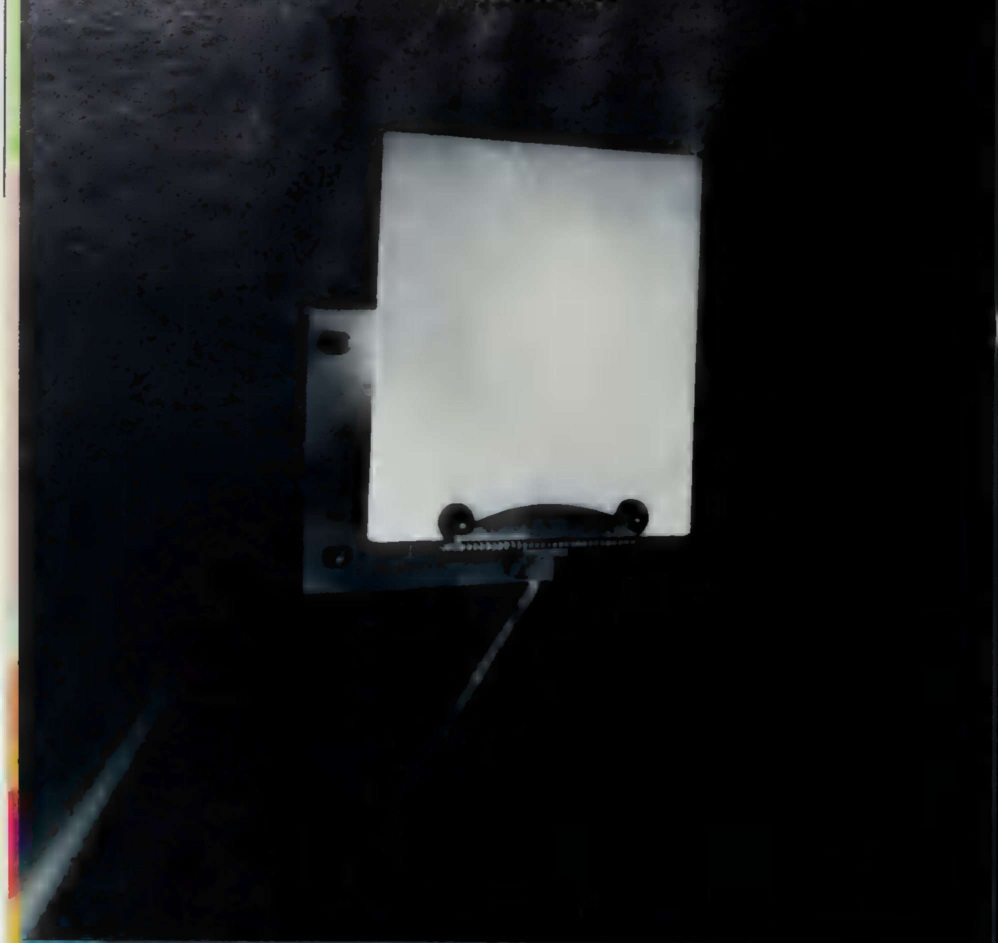

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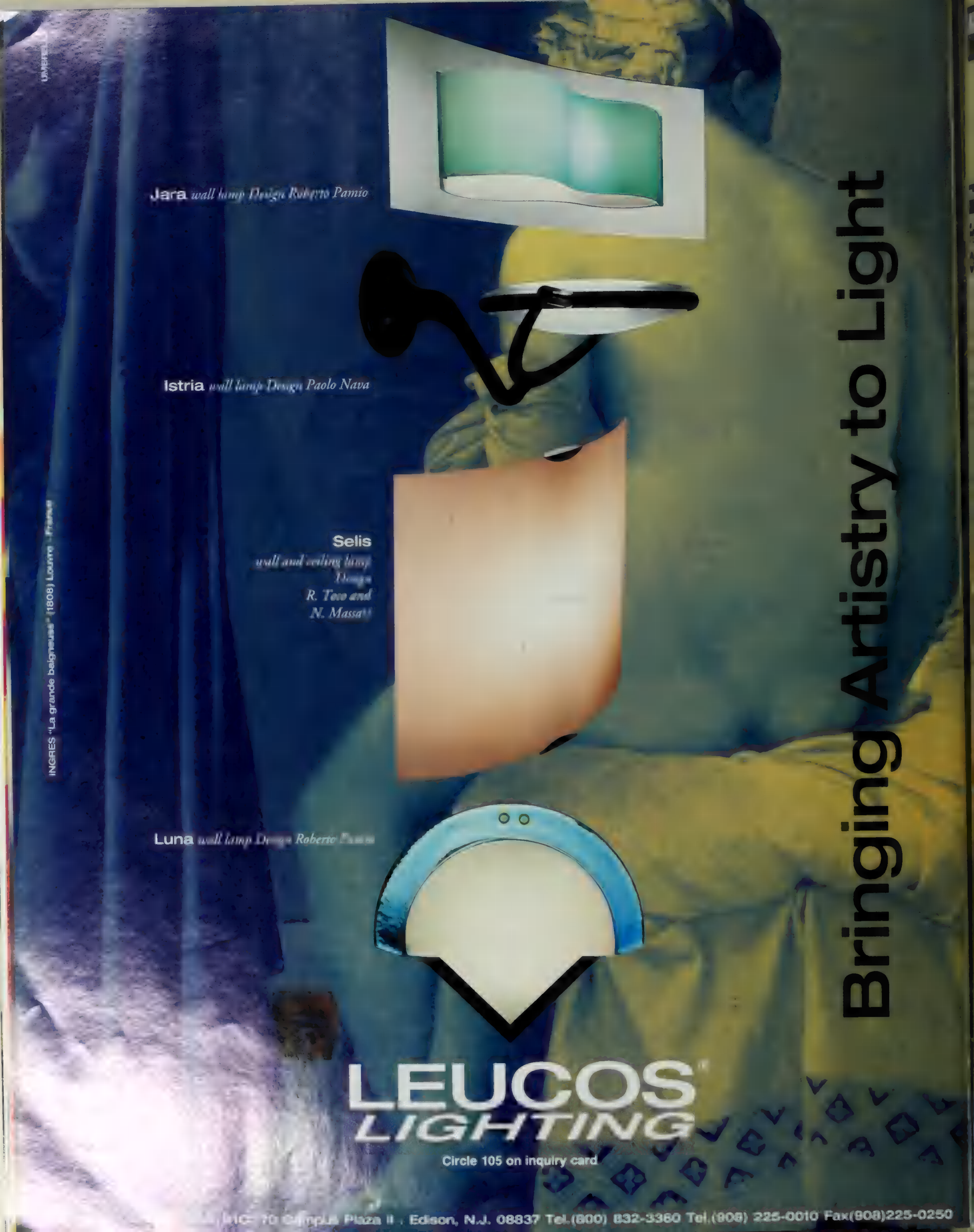

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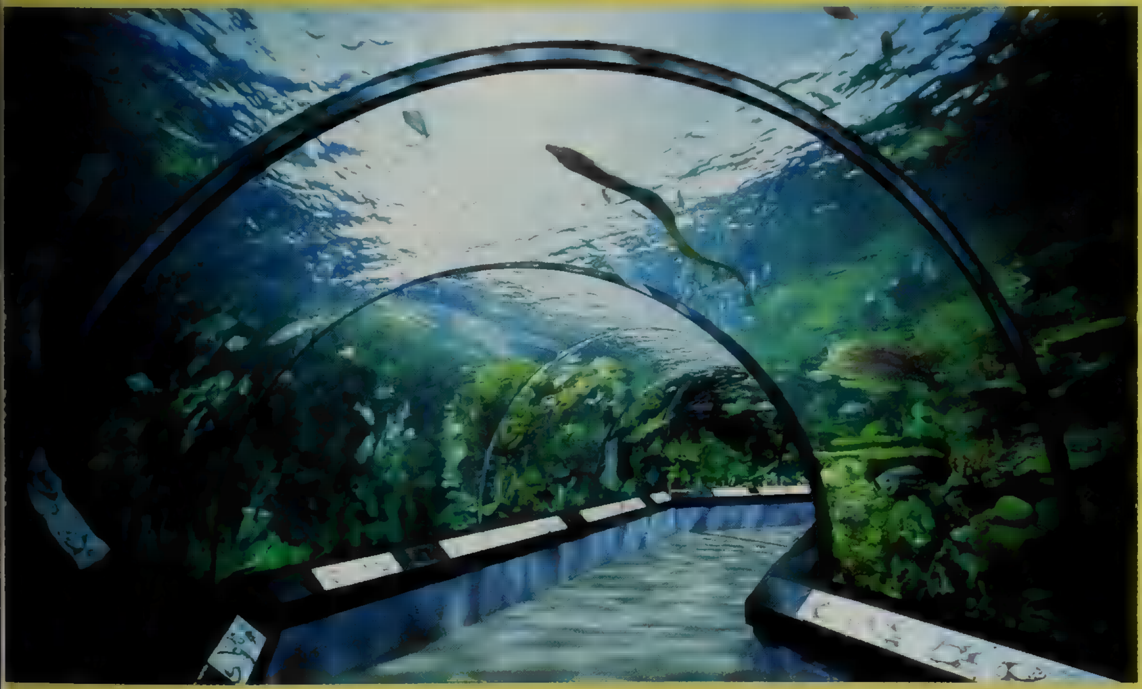
Florida

Friendly Skies Beam Over a Walk On the Wet and Wild Side

"Terrors of the Deep," designed by Peckham, Guyton, Albers & Viets for Sea World in Orlando, lets its visitors stroll in a transparent underwater tunnel, looking up—through an array of poisonous creatures circulating in 300,000 gallons of salt water—towards the blue skies, scudding clouds, and friendly sun of a tropical day. It's just like real life, except the skyworks are a concoction of Randy Burkett and Mark Hershman of Randy Burkett Lighting Design and Sea World manager of theatrical services Scott McMurtrie. Standard 1000W clear metal halide precise-distribution floodlights with dichroic filters paint a blue sky on the ceiling scrim, where constantly moving cloud formations are created by 1000W FEL lamps in theatrical ellipsoidal fixtures with cloud templates on a dimming sequencer. The sensation of direct sunlight comes from 500W PAR56 NSP quartz luminaires mounted directly to the ceiling; the sun itself is a cluster of four 1000W PAR64 NSP quartz units. As a reality check, experienced Sea World divers patroled the tunnel to verify the accuracy of sky-over-sea views. To defend against corrosion in the salty, humid environment, the designers located roughly 90 percent of the fixtures in a moisture-proof, independently cooled chamber on a wall above the tanks, and specified low-impurity aluminum with stainless-steel fasteners for ceiling-mounted fixtures. The chamber, which also contains the sources for fiber-optic bundles ending in variable-focus lenses among the reefs, has a glass-panel surface perpendicular to the aiming angles to reduce inter-reflected light. The panels are joined by flexible sealants to accommodate the expansion of glass under the extreme heat of the lamps, and its contraction when they are turned off. ■

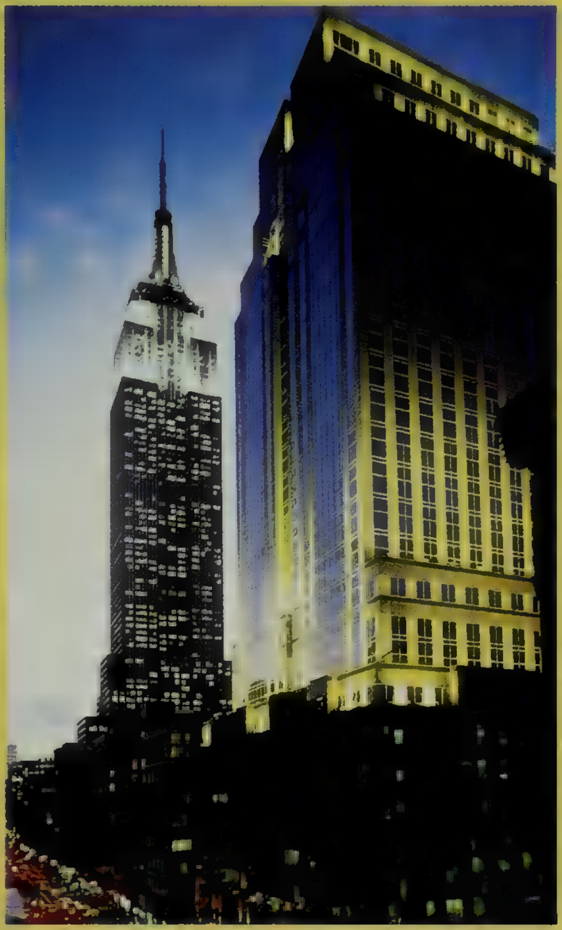
Ronald Kurtz



Mike Strauss

New York

New Kid On the Block



Just three blocks north of the world-famous Empire State Building, and only a third its height, 420 Fifth Avenue uses lighting to hold its own on the skyline. To emphasize verticality and grace, Brennan Beer Gorman/Architects used masonry piers, two uninterrupted shafts of glass and metal on the Fifth Avenue facade, and a series of setbacks and terraces leading to the recessed tower. BBG's Yann Leroy designed the lighting concept and lighting consultant Theo Kondos Associates added 1000W high-pressure sodium fixtures to shoot up the reddish granite vertical piers, and 250W and 400W sources to wash forward at the decks. At ground level, custom shrouds conceal 250W PAR sources in off-the-shelf fixtures that cost about $5 each. "We try to use parts that are already UL listed," says Kondo's lighting designer Steven Bliss. ■

California

Office Design Cuts Overhead Lighting

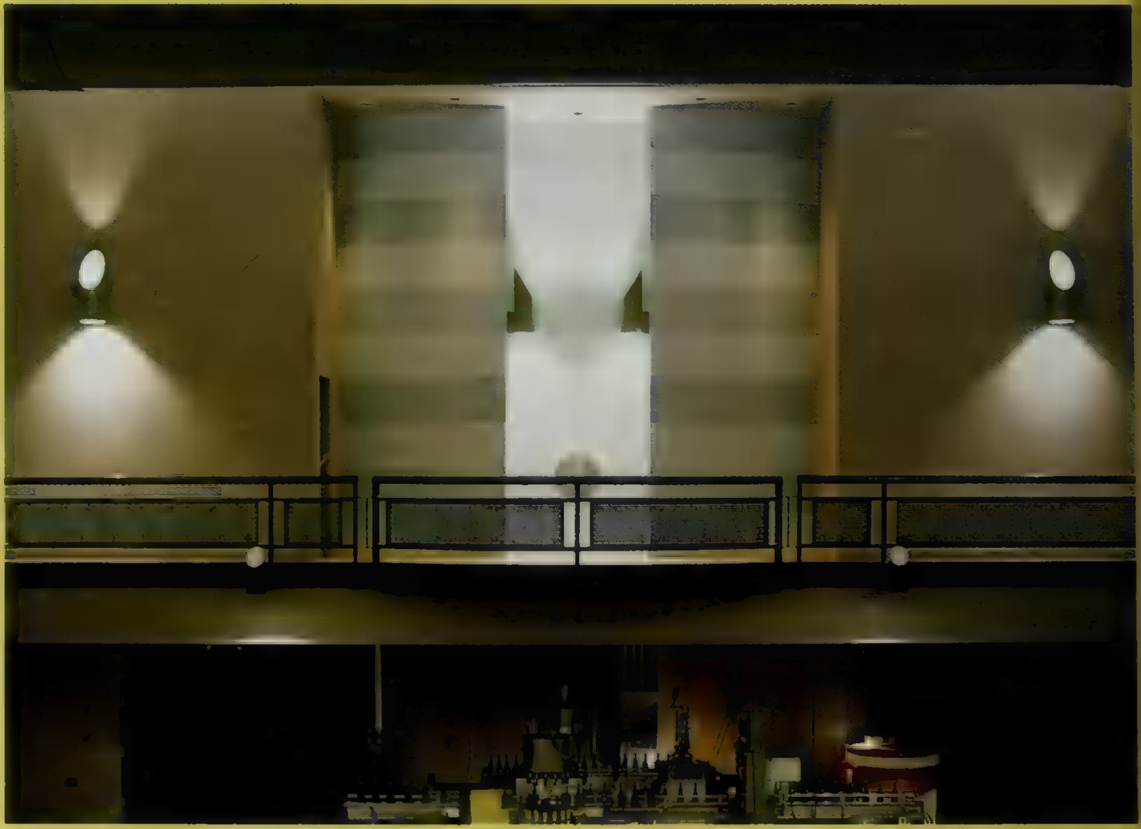
Assassi Productions

Cosimo Pizzulli's interior and lighting design for the West Coast headquarters of Sony Music in Santa Monica eliminates overhead lighting. It relies instead on skylights, task lights, and furniture-mounted indirect sources that glow off sound-absorbent architectural elements at workstations that can be adjusted by individual workers. Accents include recessed neons, incandescents in soffits, compact quad fluorescents in sconces, and the ever-changing results of the staff making itself comfortable by switching the ambients on and off. ■

California

Winery Recipe Calls for One Part Champagne, One Part Light

The buzz visitors get touring Scharffenberger Cellars in Anderson Valley is part champagne and part ■ design that casts sophisticated light on the basically industrial nature of wine making. The disgorging room (below), with its assembly line for ejecting sediment from bottles and sealing them, is crowned by a monumental curved wall that seems to burst with radiant energy; 90W PAR38 spots, in paired custom up-and-dow canisters by Doubleday Interior Design, cr ate the effect by illuminating a recessed doorway in the curve. Fixtures attached to the balcony spill wine-glasslike images on the workroom floor. "Lighting was integrated with architecture," says Light Source's Randy Whitehead, "from the first sketches on napkins." ■



New York City

Restaurant Lighting Scheme Delivers Jazz, And Separate Tables, Too

The restaurant at One Fifth Avenue was once a jazz bar and hotel dining room. Later a [illegible] the era that made high [illegible] as important as *haute cui-* [illegible] out—on 10-in. centers in the floor-level raceways behind the jazz-inspired collage walls of the dining rooms, in the recessed adjustable luminaires focused on individual tables to create a sense of separation and privacy, and in the lounge (not shown), where they shine through bubbles etched in the mirror behind the old ocean-liner bar. The aquarium effect in the bar lounge is reinforced by a miniature striplight that glints off flecks of gold leaf in the ceiling, and by a [illegible] treatment that creates self-illuminated snack bowls. ■

Briefs

Tricking the Body Clock

Researchers have known for a while that controlled exposure to unusually bright light can reset circadian rhythms—or body clocks—so that shift workers won't nod off at dangerous times, and the rest of us can stop falling into trances at four every afternoon. The theory involves a cluster of cells at the back of the brain that, when stimulated by light signals from the eye, helps to regulate drowsiness. Now, a team of Harvard scientists has patented a mathematical model that fine-tunes the required exposure time. With light 50 to 100 times brighter than room level, sleepy-time reportedly can be moved forward or back as much as three hours with one treatment, 10 hours with two. Patent licensee Light Sciences, Inc., of Braintree, Massachussetts, has just begun to investigate incorporating the methodology in task lighting for office workers.

IESNA Annual Conference

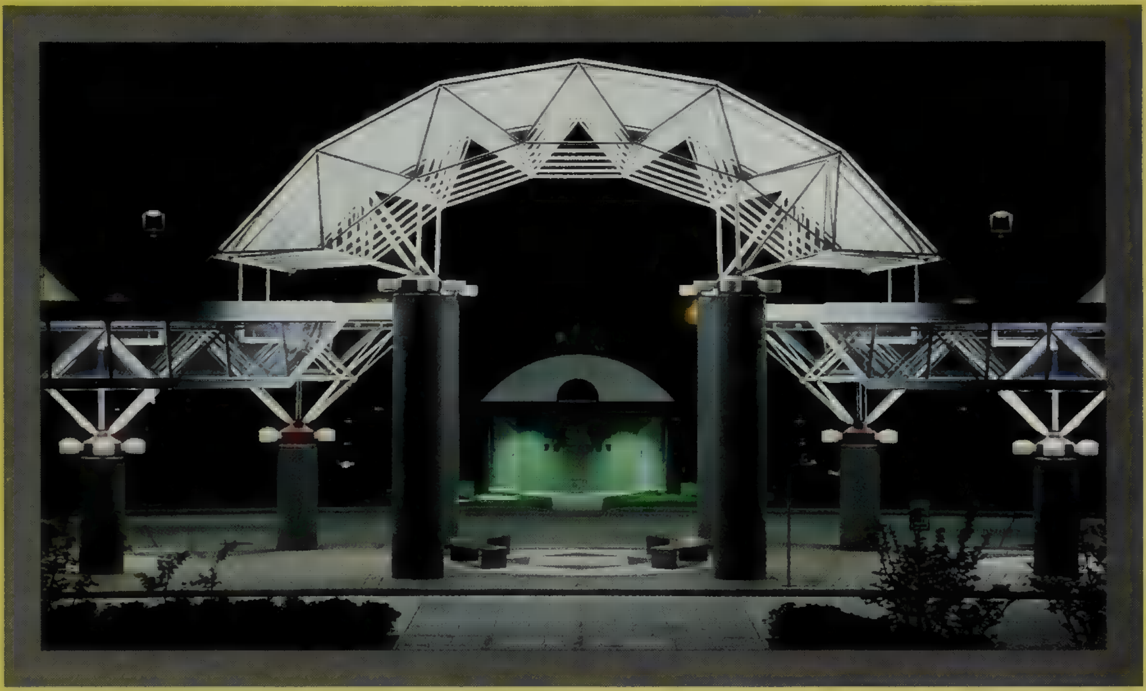
The Illuminating Engineering Society of North America (IESNA) holds its annual conference August 8-12, 1993, in Houston. Events include sessions on liability and legislation, recycled light, lighting for museum galleries, and light and color-restoration lighting for the aging eye.

Trainer Course

Independent Testing Laboratories, Inc. (ITL) will conduct a three-day "Basics of Lighting" course in Boulder, Colo., May 24-26, 1993. Call 303/442-1255, Fax 303/449-5274. ■

Houston

"Glorified Roof" Creates an Oasis for Commuters



Paul Hester

Just west of the city limits, the Mission Bend Transit Center and Park & Ride brings a welcoming glow to the beginnings and ends of the commuting day. Horizontal space-frame wings gently rotate toward the Teflon-coated fabric central vault to gather passengers from a high-pressure sodium-lit parking lot into an oasis of metal-halide clarity. Architect Rey de la Reza inserted custom uplights into the column/roof connectors so that all illumination bounces from the ceilings to the waiting areas, and picks out the lacy tree-like forms of the structure, which he calls "a glorified roof." The true-white metal halide also properly renders the backdrop grove of 30 palm trees, specifically chosen because they can be transplanted at any stage in their lives to accommodate additional rail components. The flat space frames alternate opaque and translucent coverings so that the interior glow pours upward during the dimmer hours, and natural light washes over the seating areas during the day. Separate circuitry keeps the facility mildly aglow during off-peak hours. ■

Seattle

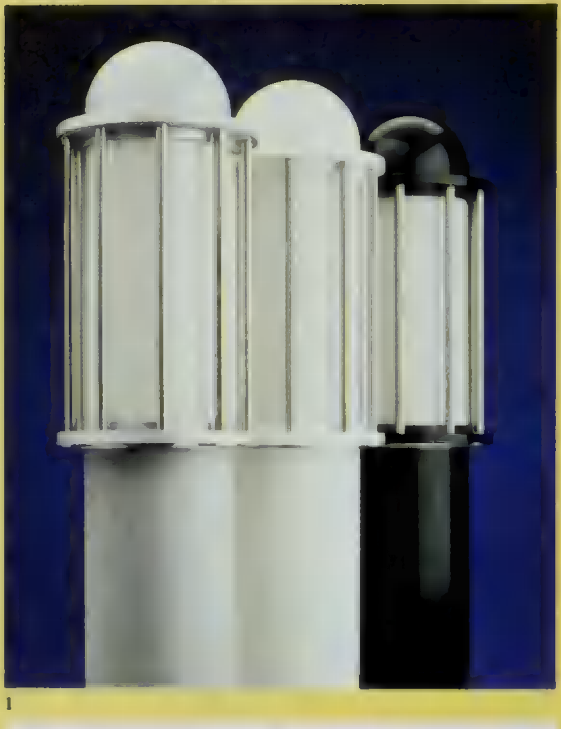
Rock-Concert Fixtures Turn Chihuly Plastics into Glass

When a stage set of twice-human-size plastic sculptures has to convince the audience that it's glass, a director who also teaches lighting at UCLA can come in handy. The lively glow that Neil Paul Jampolis cast on glass master Dale Chihuly's acrylic sculptures for the Seattle Opera recently rescued Debussy's "Peleas et Melisande" from its reputation as a crowd-luller, and drew audible gasps from the audience. Jampolis used 30 automated theatrical fixtures with movable mirrors, templates, and diffusers that adjust the focus, color, and intensity of each lamp to continually change the lighting of each sculpture. "Glass tends to reflect light as point sources," says Jampolis, "so we dimmed down to reflect rather than light the object." To amplify the glassy appearance, he stretched a very fine black bobinet veil between audience and stage to concentrate points of light and intensify the sparkle of metallic trim on the costumes he designed. Suspension of belief was so complete that one reviewer wrote, "you'd swear there is more animation in the glass pieces than in the plot." ■

Claire Garoutte

Great Danes

Louis Poulsen, Inc., of Copenhagen and Miami, is introducing several new fixtures at Lightfair this year.



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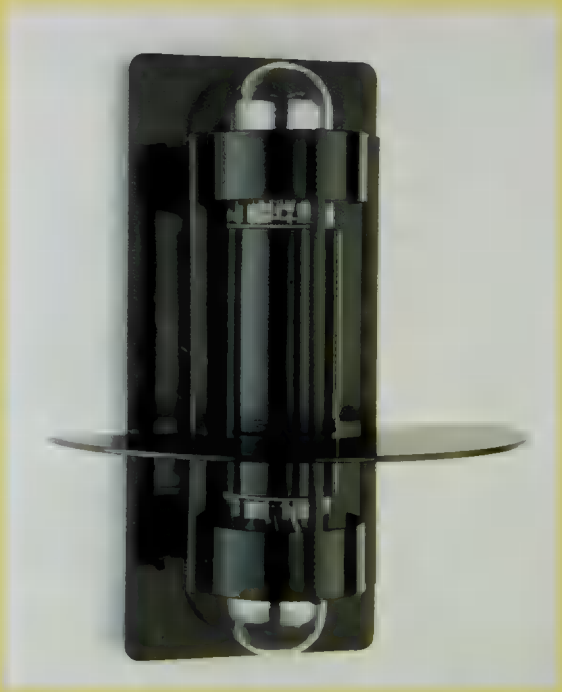

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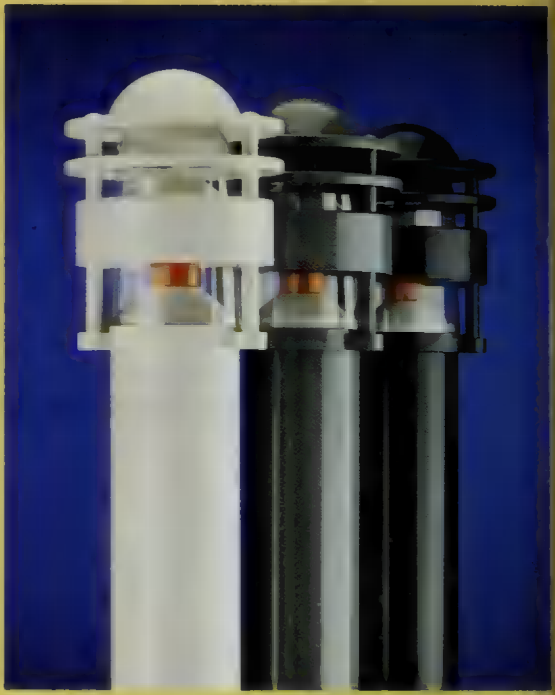

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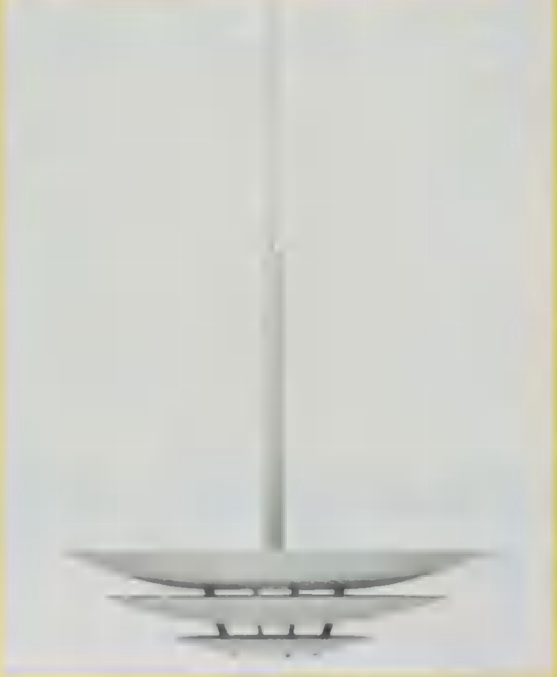

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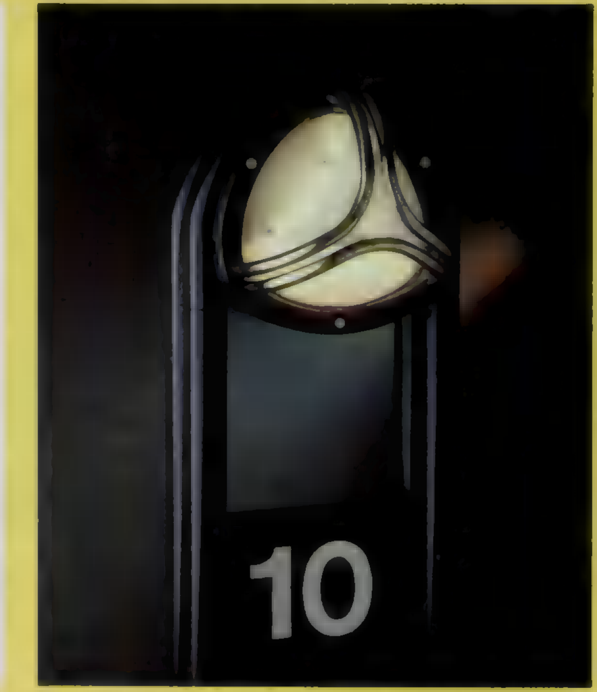

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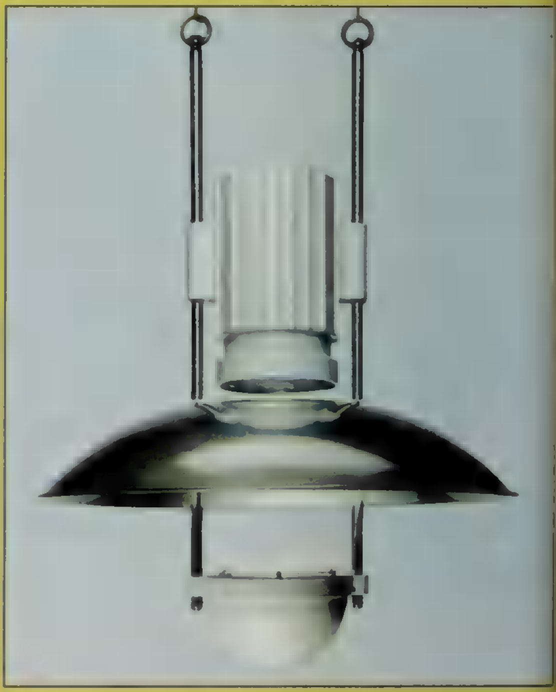

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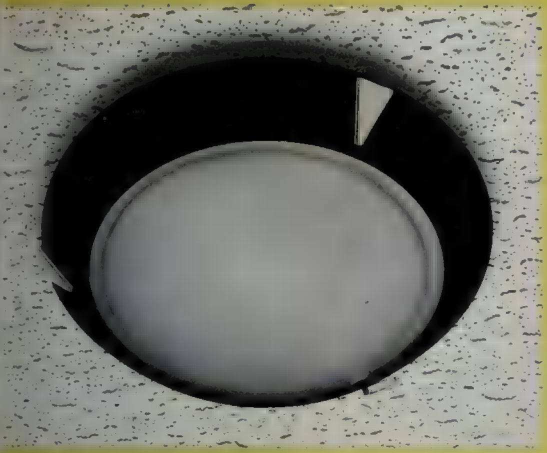
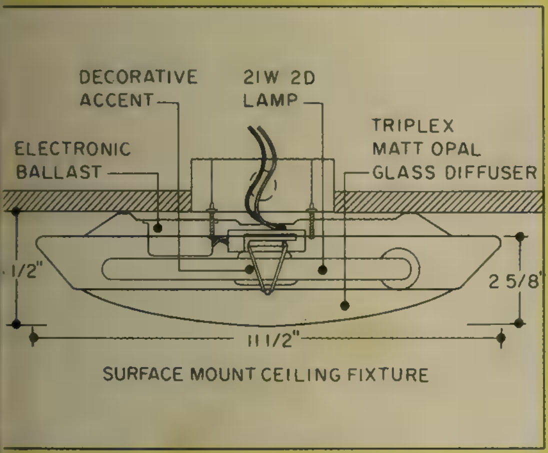
313. Architectural impact

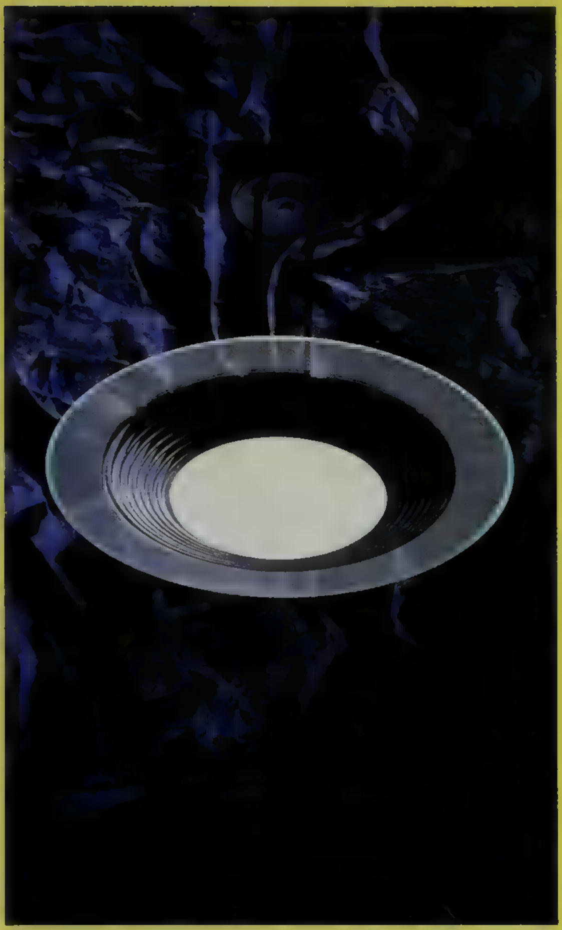
1. Named for the colonnades surrounding temples in ancient Greece, Dipteros is of- [illegible] a bollard (pictured) and in a shorter [illegible] Louis Poulsen design. 2. A [illegible] the original [illegible] Wall Maxi [illegible] compact- [illegible] aluminum in [illegible] the [illegible] in the line, but still carries the design theme through to the exterior of a project. Materials are cast and fabricated aluminum in the finishes shown, with a polycarbonate lens; accepts several types of HID sources.
4. Contoured reflectors joined by aluminum stems add shadow and contrast to Oslo, available both as the pendant shown and as a sconce. The design is said to eliminate visual dead spots between the ceiling and the luminaire, without generating reflections on VDT screens. Lamping: four 27W CF.
5. Shown here as a "stander," Columbus bulkhead lights have been built with special attention to vandal resistance, with a stainless-steel guard in front of a polycarbonate lens. A triangular, perforated-metal diffuser reduces observed glare, directing most of the HID or fluorescent light downwards.
6. Developed for the high ceilings of the Munich airport, Louis Poulsen's large aluminum pendant directs up- and down-lighting from a 500W halogen or double-ended metal-halide lamp. Reflectors can be specified for either wide- or narrow-beam spread.
Louis Poulsen, Inc., Miami. ■

Special Delivery

New fixture and reflector designs promise to extract every possible lumen from GE's 2D compact-fluorescent lamp







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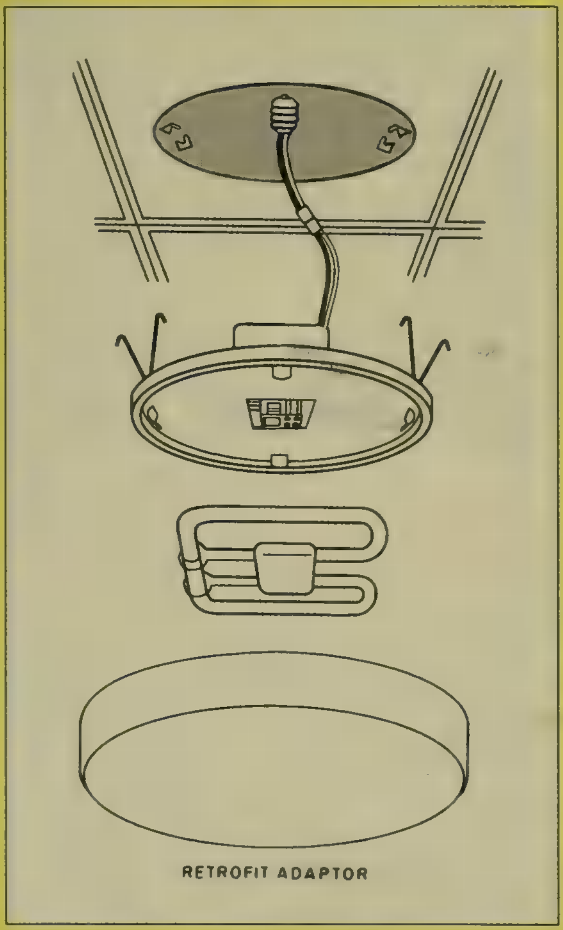

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14. New firm, new fixtures

ack Zuckerman, CEO of CSL, a Los Ange-
es manufacturer known for decorative
alogen lighting fixtures, has established
new company, Alta Illumination, specifi-
ally to make and market luminaires for the
utterfly-shaped 2D lamp. A miniature flu-
rescent (3.70-in. wide by 1 1/2-in. thick in
he 10W version) invented by Thorn and
sed widely in Europe, the 2D was acquired
y General Electric and introduced to the
J. S. market last year. The unique shape of
he lamp—an almost-continuous, uniformly illuminated curve—demanded a totally new reflector in order to create a fixture with enough punch to match the 65-LPW efficacy of the 2D. The 2D's shape does not block light from the illuminated surface as does the quad fluorescent, and it has a larger lit surface. Available in sizes up to 38 watts, the 2D comes in two color temperatures: a coolish 3500K, and an incandescent-like 2700K. Alta's first products are surface-mount ceiling fixtures (1 and 2), and retrofit kits for open-reflector downlights (6, 7), as well as a shallow (3 5/8-in. deep) housing with an integral electronic ballast (3). Also, there's a wet-location recessed 2D showerlight. Diffusers are matte-opal and marbleized French-made Triplex glass, or UV-stabilized acrylic in regular, shallow, and fluted styles. The downlights have been followed by more-decorative fixtures, including a pendant (4) with an acrylic ring edge-lit from the center, and a 2D version of CSL's Intimacee sconces (5), shaded by hand-blown Murano glass in cobalt blue, frosted, rose, and granite-marble. Next: 2D office lighting. Alta Illumination, Valencia, Calif. ■

Plan Ahead When Specing Custom-Lighting Fixtures

By Stephen Blackman

"Custom lighting" has several different meanings. In its most basic sense, it means buying a stock fixture but requesting the distributor order it with a custom option, such as a special lamp or color. The next level is communicating a request directly to a manufacturer for a modification not found in its current product line—for example, asking a decorative chandelier manufacturer to revise a residential fixture into an extra-wide multitiered chandelier to hang in the atrium of a hotel.

At the highest level, custom lighting means designing a fixture from scratch and having it built by one or more specialized fabricators. This is most often done in applications where the significance of the project calls for a functionally specific fixture or one that esthetically complements the architecture.

What's the first step in designing custom lighting?

First, decide if the project really demands a custom fixture. Look closely at the extra time and money required before deciding. Describe the specific circumstances that demand a custom fixture, and decide what the fixture must do and what can be eliminated. This is a balance between the function and esthetics of the fixture versus the constraints of the budget and schedule for the project. Always investigate whether an appropriate fixture already exists before reinventing the wheel.

What else should the fixture do?

After functional, esthetic, and budget considerations have been established, the fixture design must also take into account the other qualities necessary to create a properly functioning fixture. These are usually overlooked in the original design and include:

Safe [illegible] protection of lamps and electrical [illegible] formance to UL [illegible] local codes, [illegible] of transport, [illegible] and maintenance; [illegible] photometric performance.

[illegible]

Is the fixture affordable?

The designer must establish a realistic allowance for custom fixtures from the total job budget. Try to get a current price for production fixtures similar to those required by consulting with the manufacturer of those fixtures. Describe the additional work or materials needed—often a hand sketch will do—and ask for a preliminary estimate. Some manufacturers give an estimate as a "ball park" figure. Others use a historically based percentage up-charge for such work.

On more involved projects many fabricators are more than happy to give some initial guidance in exchange for the possibility of getting the actual job. Regardless of who is asked, designers should still seek cost and design advice. Of course, budgets should always have a built-in contingency for unanticipated costs.

How do you estimate delivery time?

To do this, the project must be broken down into phases and time estimated for each phase.

Phase One. The fixture must be designed conceptually. The budgets must be established and presented to the client.

Phase Two. The fixture must be developed and drawn, often by a third party. Allow time for revisions, submittals, and approvals of samples between the fabricator, designer, and the client.

Phase Three. This is the production phase. It has the most variables. The project may require that tooling be made before fabrication begins. Time is also required when a few craftsmen hand-build many fixtures. Even when tooled for quick high production, it can take weeks for some manufacturers to fit a custom project into their production schedules.

Phase Four. Shipping and installation also requires a careful time estimate. A design that requires specialized installers will add time. Additional time should be added in against last-minute revisions, installation irregularities, fixture fine-tuning, or malfunctions.

Can the fixture be shipped and installed?

Although a seemingly obvious question, it is often overlooked. Will the finished fixture be able to be broken down for shipment? If so, can it be shipped through normal parcel carriers? Is its shipping size beyond normal carriers limits? Will it require its own truck or flatbed? Will the fixture fit through the building door? Can power be easily supplied to the fixture location? Is this location properly prepared to support the weight of the fixture? Will this fixture cause any local union or electrical-code violations? Will other building trades on site accidentally soil or damage the fixture? The best way to anticipate problems is to work out answers to these questions early on.

What should you include in the client presentation?

A proper presentation should establish the functional and esthetic purposes for the fixture. The presentation should show a conceptual representation of the fixture adaptable to changes that may be required later. It is easier to refine a concept as it progresses in development than to ask a client to abandon a fixture design that they have fallen in love with. The presentation should also include a realistic preliminary budget and production schedule.

What about fixture development?

Although architects and designers are certainly capable of developing and engineering fixtures, this may not be a cost-effective use of their time. Lighting designers, manufacturers, or specialty custom-fixture fabricators are often better suited to the task with their already-excellent knowledge of available fixtures, budgets, lighting technology, and manufacturing techniques.

If the project's requirements are very straightforward, working directly with a manufacturer can be very cost effective if it already does similar types of work. In this case, the designer will probably assume most of the responsibility for the initial design and later coordination of the installation. As an alternative, a specialty custom-fixture fabricator, who can give practical advice from the start and will be responsible for the total engineering and assembly, may be right for some jobs.

There are certain "right" questions designers should ask themselves before committing time and money.

How do you select a fabricator?
Many companies offer custom-lighting fabrication. Here are some questions to ask when deciding if a fabricator is appropriate for a given project. Is their past work similar to it? Will they offer the necessary level of engineering support? What is their reputation and how do their references check out? Remember this is the first and last time they will produce this fixture—but a poor job can have a lasting effect on the designer's reputation.

What design documents does the fabricator need?
The fabricator should be given as detailed an explanation of the design intent and concept as possible, including a written spec sheet detailing the fixture's performance, material, finish, and functional intent, along with any color or material samples to match. Do not over-detail design drawings. Fabricators do their best when given plenty of leeway in determining the most efficient method of fabrication and assembly.

What does the fabricator provide?
After reviewing the specifications, the fabricator should provide the designer with shop drawings, specifications, and submittals of actual material samples or finishes. These should be fully scrutinized, as changes during production will prove costly. Requesting prototypes or samples of components before production can be good insurance against later problems.

What is the most economical material and fabrication method?
Sheet-metal fabrication is by far the most economical. It is easy to find qualified fabricators from small-quantity hand fabricators to those with precision computer-controlled machinery. Sheet-metal fabrication is relatively quick and it should be considered.

What about tooling?
The term "tooling" encompasses all of the special metal-forming dies, patterns, forms, and so on required to produce the fixture. Generally, tooling must be custom-made for each job and is expensive. On the other hand, when fixture quantities are substantial, tooling may speed up production and significantly lower individual fixture costs. If the fabricator determines tooling is required and it proves to be too expensive, the designer may have to redesign around cheaper manufacturing processes. These include computer-controlled lasers or waterjets for cutting intricate shapes and silhouettes in sheet materials or using existing tooling, such as existing spinning chucks for round metal shapes or existing extrusion dies for decorative aluminum extrusions. A significant amount of time and money can be saved by consulting with fabricators and determining if they already have tooling similar to that which is needed.

Which processes should you avoid?
Although cast metal and formed glass are very desirable in custom fixtures, they should be avoided. High pattern costs, long lead times, poor tolerances, and high finishing and labor costs are just some of the possible problems. It is sometimes easier to buy existing fixtures and cannibalize parts than to make them from scratch.

Who coordinates the project?
The designer's designated representative should coordinate the people involved in the fabrication of the project, method of delivery, and installation of fixtures. It cannot be stressed enough that one person should be the bridge between the fabricators, installers, and the client in conveying the original intentions and requirements for the fixture.

Who's responsible for problem-solving?
The scope of responsibility for each party should be clearly established at the start of the project. Malfunctioning lamps, scratched or dented finishes, crooked alignment, fixture overheating, and other problems are common on many jobs. Although a repair may be the responsibility of one of the fabricators or installers, the biggest cost may be actually be to the designer in terms of time and energy lost rectifying the problem, or in damage to the designer's reputation.

Custom-lighting fixtures usually provide high visibility to a project and the final results usually makes all the effort worthwhile. By investing more time in planning ahead and asking the right questions early on, often a lot less time and effort is required in the long run. ■

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Custom fixtures can allow for some cost savings. The custom pendant and sconce at top and center use vacuformed acrylic for the shade and cast polyester resin instead of glass and granite. The use of off-the-shelf electrical parts saves additional cost. The sconce on the bottom has a custom slumped-glass shade, but is otherwise made of standard electrical parts.

Spreading the Light Around: Innovations in Distribution

New lenses offer designers more latitude in layouts—and more even illumination—by providing greater control of light distribution.

By Lindsay Audin

Each light fixture model has a proper spacing-to-mounting-height ratio (S/MH) to ensure consistent illumination. Fixtures with a S/MH of 1.2, for example, should not be spaced apart more than 1.2 times their height above the task (typically 30 inches above the floor). When recessed into a 9.5-foot ceiling, that's 7 feet above the task and no more than 8.4 feet apart (7 X 1.2 = 8.4), measured center-to-center.

Spacing fixtures further apart may create noticeable variations in illumination on task surfaces. Typical design methods provide only average illumination levels, and no indication of such differences.

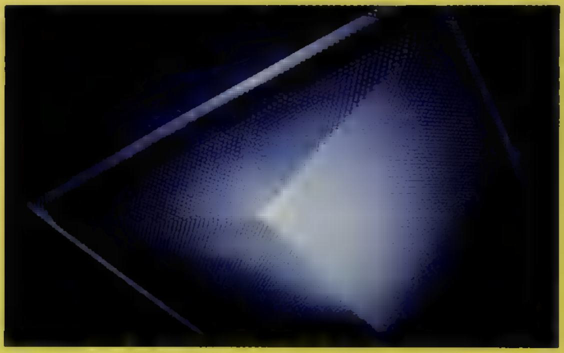
Creating the problem

Contractors—and some designers—often minimize installation cost by using a few large fixtures, sometimes spreading them too far apart, e.g., two four-lamp fixtures used where four two-lamp fixtures would have yielded more even illumination. Perception of brightness is fixed by the brightest area, so such variations may actually make part of a space appear to the eye to be darker than indicated by a light meter. These differences may also be accentuated by dark colors on walls and furnishings.

Specular reflectors and parabolic wedge louvers typically narrow fixture beam spread, reducing the S/MH, and further aggravate the problem. Relocating fixtures is usually cost-prohibitive and may require additional fixtures, so the net result may be a cave-like environment not conducive to occupant comfort or productivity.

Early solutions

Several new lens patterns were developed in [illegible] 1980s to improve appearance where fix[illegible] lit spaces had been delamped. Such [illegible] light levels also further accentuate uneven [illegible] so these lenses [illegible] areas [illegible] by more [illegible] the light, while "[illegible]ing" [illegible] lamps were re[illegible] VDT screen glare by [illegible] oriented [illegible] while widening [illegible] dark areas to the sides of VDT operators.



Pyramid-shaped lens distributes light evenly.

These asymmetrically-patterned flat lenses have proven useful during lighting upgrades and for new fixtures equipped with sophisticated reflector designs. Specular reflectors, for example, may make fixtures appear more glary (even when they do not change the S/MH), but adding such a widespread lens can reduce the fixture's apparent brightness while distributing light more evenly. Asymmetric lenses may, however, create beam patterns on walls, and glare in some locations, so try them in a test room prior to a large purchase.

Better answers

Two more innovations are now available for both existing and new fixtures. Developed to allow re-use of existing (but poorly spaced) fluorescent pendants, a new widespread specular reflector and lamp-relocation system raises the S/MH of fixtures from the usual 1.2 (or less) up to 1.5. Returning to our example, this system increases allowable fixture spacing (from the initial 8.4 feet) to 10.5 feet, or (alternatively) creates more even illumination where variations previously existed between fixtures.

The second innovation adapts a lens shape previously seen only on recessed HID downlights. Looking like an upside-down pyramid stretched along one axis (see photo), this lens has up to 40 percent more surface area than a flat lens of the same width. While its surfaces send more light out at higher angles, the extra area of the lens mutes its brightness (known more precisely as "luminance") to a more acceptable level. The ends of the lens are also angled, so light distribution at a fixture's ends may also be improved, especially when the fixture's original lens created beam patterns or a "hot spot" on a nearby wall.

When existing fixtures are not properly spaced, widening distribution opens the door to another trick now being used by clever designers: field experience shows that measurably lower light levels can be made acceptable if variations are minimized, thus, less installed wattage is required. Beware that this opportunity does not exist in spaces, such as merchandising, where major variations in levels may be essential to their function.

A tough test

A basement hallway used for locker storage provided a good test of these two technologies. The existing two-lamp recessed one-by-four fixtures were up to 18 feet apart in a 10-foot ceiling, yielding a 6:1 ratio of illumination when measured at floor level under and between fixtures.

As part of an energy-efficiency upgrade, a widespread specular reflector was added. The light level ratio dropped to about 2:1, greatly reducing variations. General appearance improved, and more light was placed on lockers previously in the dark.

The pyramid lens was then added and the levels became even between and below the fixtures (i.e., a ratio of 1:1), further improving appearance and locker illumination. Elimination of dark and light spots "fooled" the eye into accepting a lower light level since no bright spots existed to cause the pupil to shrink.

The bottom line

Widespread reflector kits (or fixtures) cost about the same as standard versions, but widespread lenses come at a premium, usually $18 to $30 apiece. Relocating or adding fixtures could yield the same result, but at a much higher cost. When improvements in distribution were needed, using these lenses and reflectors cost about a third of those other options. ■

Lindsay Audin is the energy manager for Columbia University.

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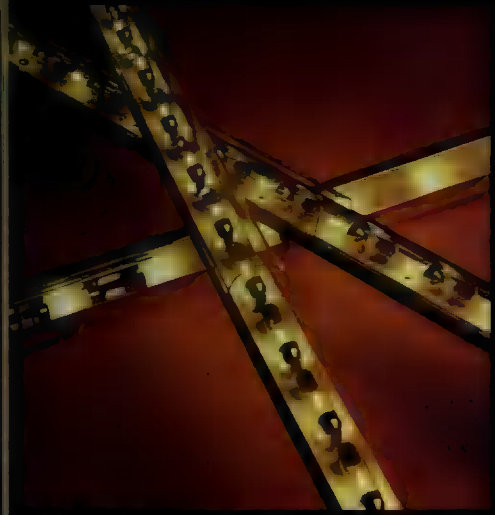

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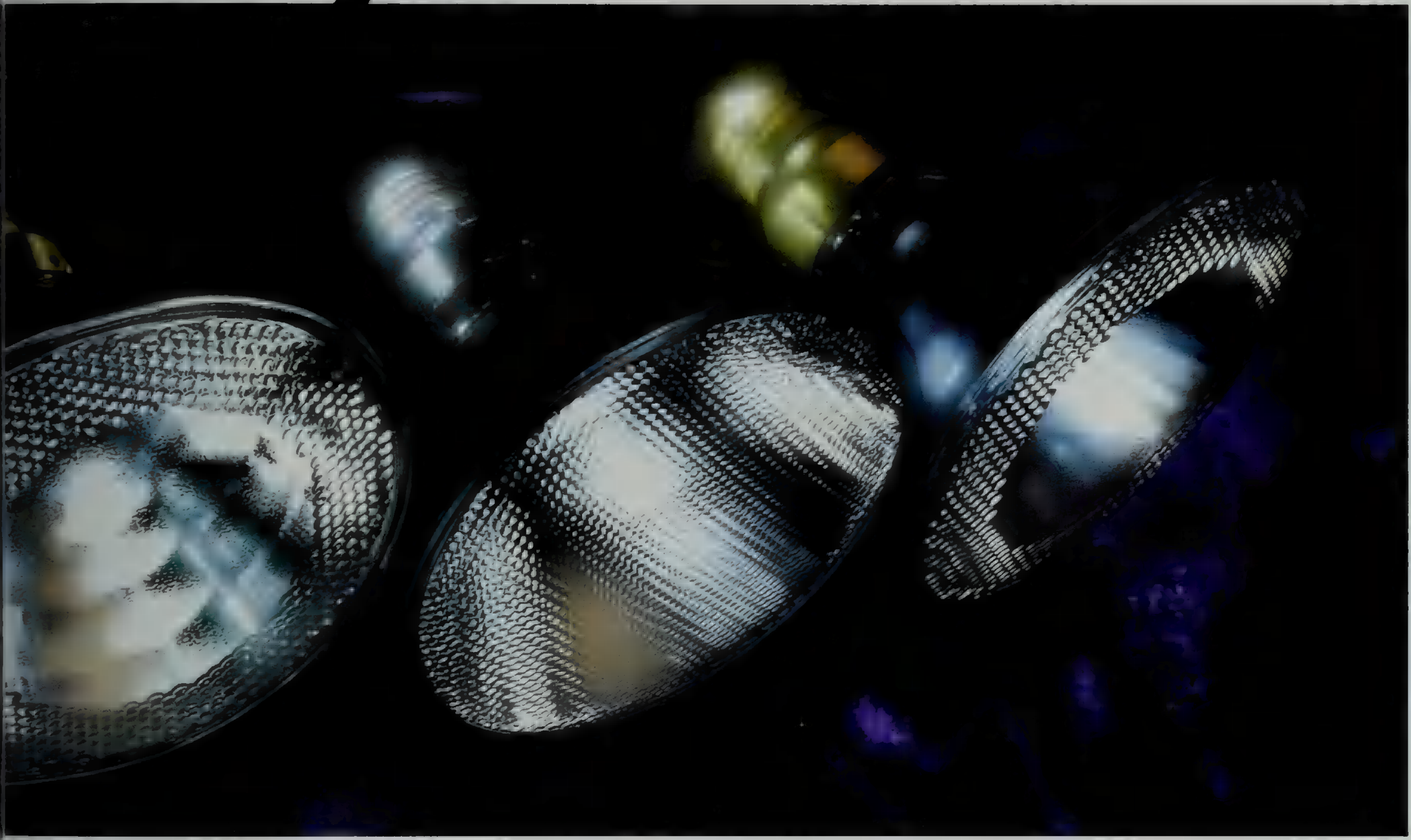

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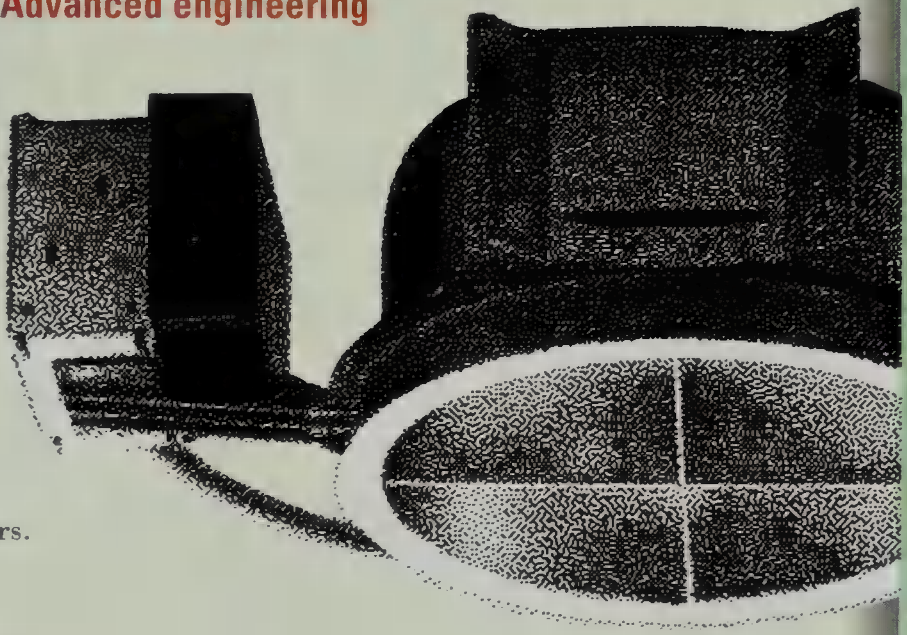

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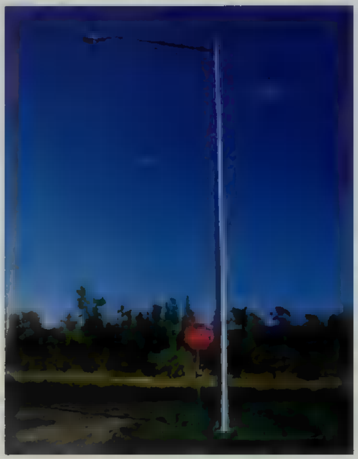
Lexington Aluminum Lighting Standards



Cost-effective, durable, attractive, & strong describe Lexington Standard Corp's aluminum lighting standards. Available models include round tapered/straight/decorative, square straight, hinged, & embedded. The wide range of finishes & colors appeals to architects; contractors appreciate the ease of installation; distributors are attracted to the economical prices; owners enjoy a product that's virtually maintenance-free.

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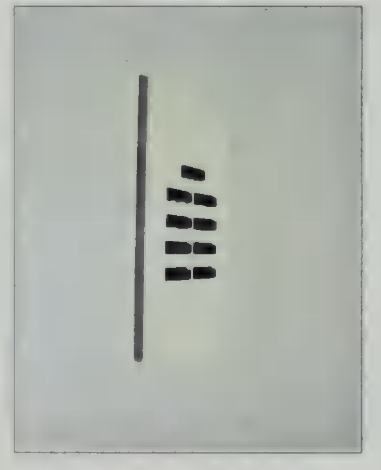

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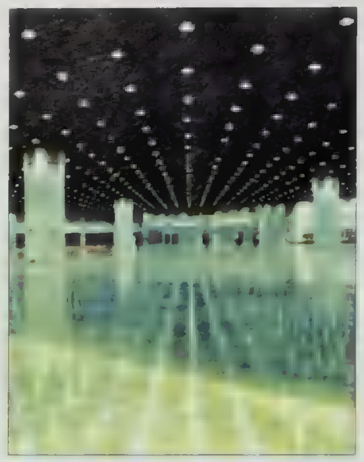

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Hanover Lantern Catalog Supplement '93

Hanover Lanterns' 1993 catalog supplement contains a selection of newly designed cast titanium/aluminum lighting fixtures which feature clear bent beveled glass, solid brass finials, spindles & candle clusters. Also included is a selection of decorative single & multi mailbox holders, post, & decorative cast titanium aluminum post base covers. 470 High Street, Hanover, PA 17331. Call (717) 632-6464 or, Fax (717) 632-5039.

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High-Lites Emergency Lighting

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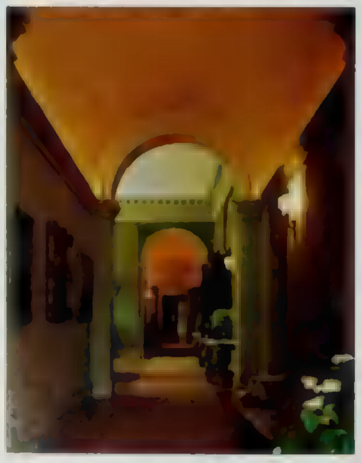
COVE LIGHTS R US



Lightworks offers a complete line of specification grade cove lighting. Features include low and line voltage, incandescent and fluorescent and curving. Up to 100,000 hour lamp life on some fixtures. Any color temperature or light intensity may be attained. High power factor electronic and dimming [illegible] available. UL listed. [illegible] immediate reply FAX: 215-[illegible]

Lightworks

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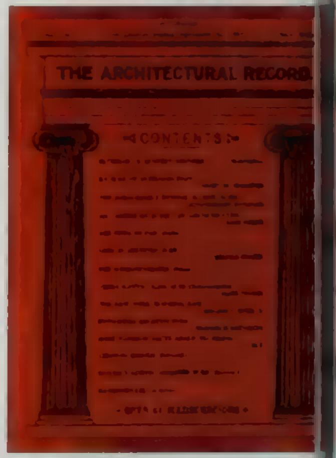

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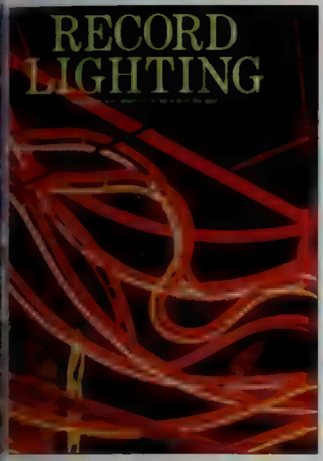

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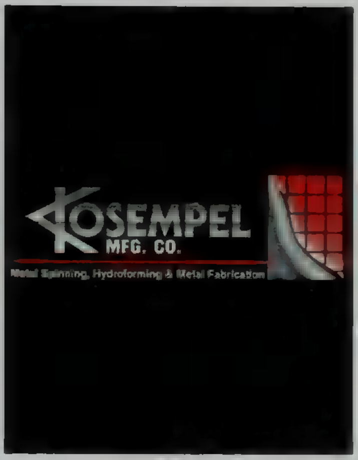

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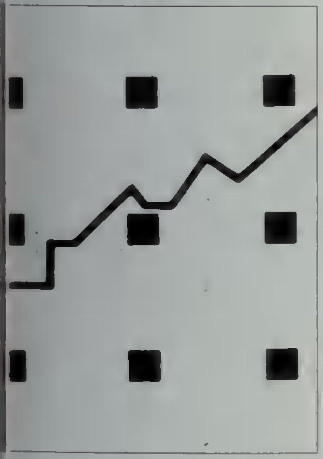

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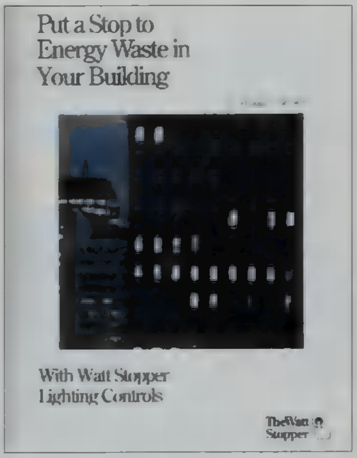
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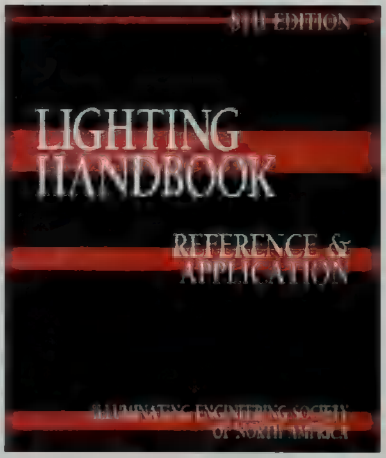

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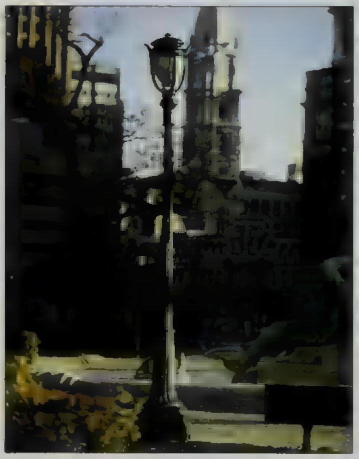

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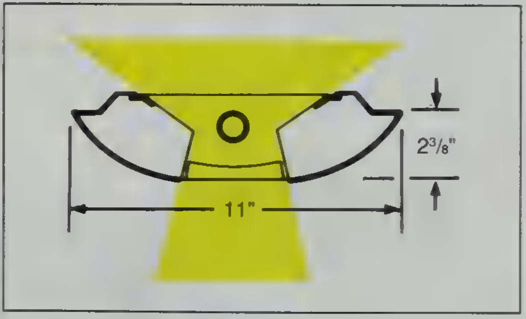

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High Marks for Lightfair and LRC's *Specifier Reports*

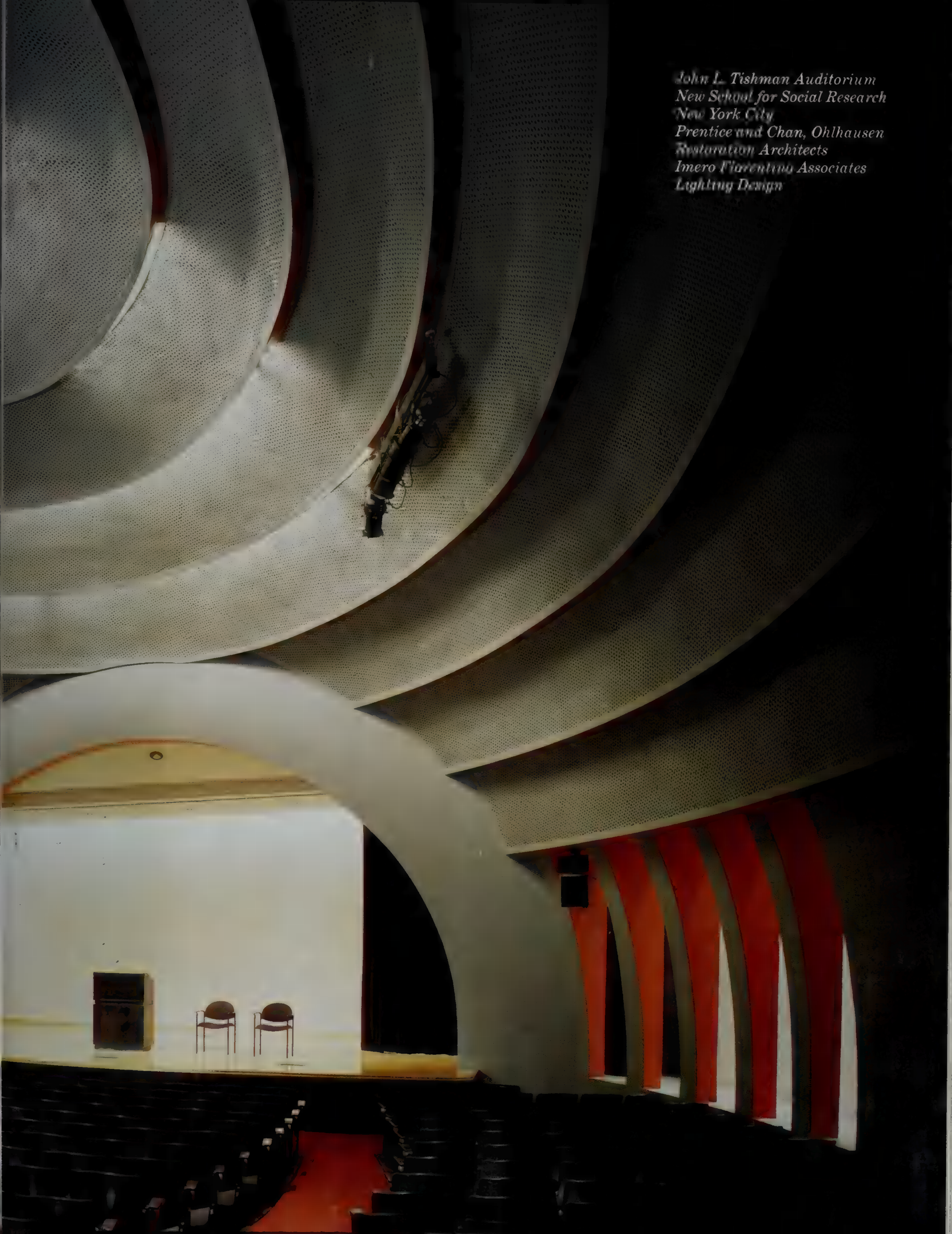
Attendees of Lightfair, the lighting trade show that takes place this month in San Francisco, will see dozens, if not hundreds, of new lighting products. Personally, I can't wait to see what the manufacturers have come up with this year. Looking back at recent Lightfairs, I often think the last three or four years will be remembered as the era when the efficiencies and technical complexity of commonly available lighting products finally started catching up with the advances in other technologies, such as computers, audio, video, and the like.

But Lightfair also represents the specifier's dilemma in concentrated form. Knowing exactly which lighting products to specify has never been easy. The performance of many of them appears to be either identical, or can be differentiated only by data that may or may not come from an independent testing laboratory. Still, with the vast number of utility-sponsored lighting-equipment-rebate programs, and the EPA's Green Lights [ARCHITECTURAL RECORD LIGHTING, February, 1993, page 25], the demand for accurate, unbiased information about lighting products is unprecedented.

Fortunately, there is a source for this information. The Lighting Research Center's National Lighting Information Product Program recently published the fifth of its *Specifier Reports*, on parking-lot luminaires. Previous reports have covered power reducers, specular reflectors, occupancy sensors, and electronic ballasts. The reports do a terrific job of explaining terms and evaluation methods, and covering the basic criteria specifiers should heed when choosing a product. In most cases, the reports go on to evaluate the performance of actual products supplied by manufacturers.

More *Specifier Reports* on other product types are in the pipeline. The only drawback is that single copies of the beautifully produced 12- to 20-page reports are $30, with price breaks for those ordering larger quantities. That might be well within the budget of a utility company, but for an individual it's definitely expensive. If you wish to face the specification dilemma head on (and have the money), the Lighting Research Center can be reached at 518/276-8716. If you'd rather just be dazzled, spend the money to go to Lightfair instead. *Charles Linn*

Staging a Comeback



John L. Tishman Auditorium
New School for Social Research
New York City
Prentice and Chan, Ohlhausen
Restoration Architects
Imero Fiorentino Associates
Lighting Design

In his 1931 ARCHITECTURAL RECORD coverage of the New School for Social Research—whose architect was the theatrical designer Joseph Urban—Shepard Vogelgesang wrote, "The lighting of the auditorium is designed to place dramatic emphasis on the stage."

So it may have appeared in the beginning, and it certainly does now, but during the intervening 60 years of ad hoc lighting revisions, most of those who appeared on that stage were blinded by glare but still didn't have enough light for reading speech notes or musical scores. Illumination levels at the front of the space were five fc or less.

Those same years added the Parsons School of Design to the New School family, but, with a perverse sense of balance, also converted Urban's graduated shades of subtle gray sparked by English vermillion into a monotonous white that all but extinguished the power of his spartan arcades and his ellipsoidal ceiling with rising tiers textured by acoustical perforations. The original dimmers had been disconnected for safety reasons, and battery-pack emergency lighting was placed haphazardly.

A 1992 restoration by Prentice and Chan, Ohlhausen [ARCHITECTURAL RECORD, January 1993, page 114] brought back Urban's original color palette, expanded the stage to conform to his original design, refurbished all the surfaces and seats, installed modern audio-visual systems, added some acoustical improvements, and developed the kind of lighting scheme Urban would have used if he'd had 1990s technology available to him.

Frank Kelly, project designer at the lighting firm of Imero Fiorentino Associates, retained Urban's cove lighting scheme in the top four elliptical tiers, but refined it to take advantage of halogen line-voltage lamps. The effect on the pierced texture and the original graded shades of gray paint is true to Urban while saving on wattage. A system of permanent downlights above the stage delivers at least 100 fc for people who need to read notes or musical scores. For events that are to be videotaped, backlighting is available to help visually separate form from background.

Stage lighting was removed from the flanking arcades, which had never provided the proper angles. Some mounted fixtures were added on ladders at the back of the balcony on either side of the projection booth. The most visible ones seem to slip discreetly from the shadows of one of the ceiling tiers; they can be lowered for maintenance and unplugged completely for events that call for showing off the architectural purity of the space. Meanwhile, the arcades are free to celebrate themselves in the gleam of concealed downlights. One control system operates architectural presets and a theatrical console.

For safety, low-voltage strips are wired into the armrests of aisle seats. New soffits above the doors contain recessed exit signs, emergency lights, and additional general area illumination.

[illegible] Urban's auditorium represented one of the most up-to-[illegible] lighting in the building—along with the [illegible] pattern in the lobby. Probably [illegible] the shapely cove only re-[illegible] tubes before being [illegible] with the use of compact [illegible]

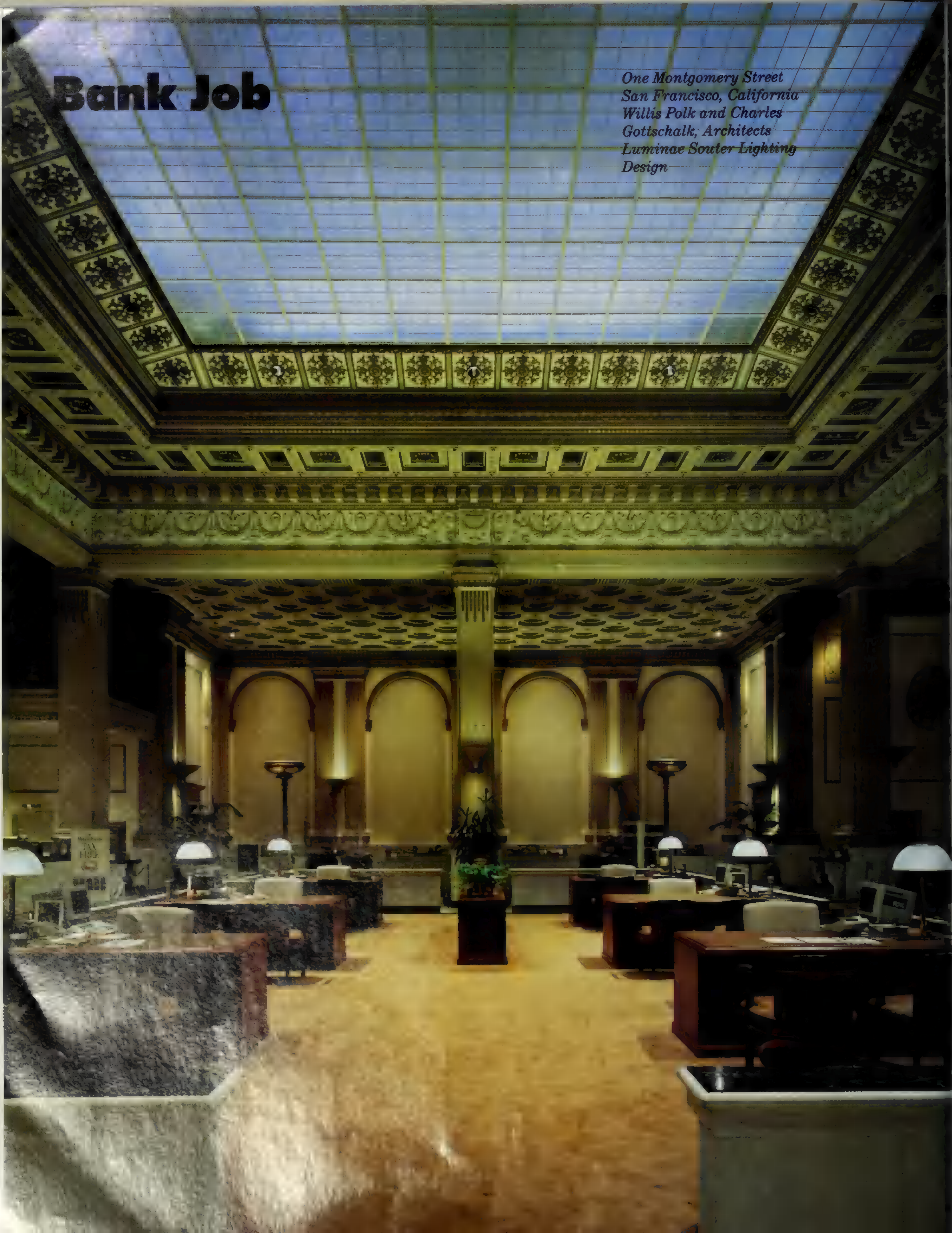
[illegible] a freelance writer based in New York.

Brian Rose photos

The restored 1931 auditorium and lobby at Joseph Urban's New School for Social Research still looks like a vision of the future, possibly because years of "updating" had erased his vermillion and graduated shades of warm-gray and replaced warm standard A lamps with efficient lamps that, up until very recently, were capable of casting only the chilliest of glows.

Credits
John L. Tishman Auditorium
New School for Social Research
New York City
Owner: *New School for Social Research*
Original design, 1931: *Joseph Urban*
Restoration Architect: *Prentice and Chan, Ohlhausen—Rolf Ohlhausen, principal-in-charge*
Lighting Designer: *Imero Fiorentino—Frank Kelly, project designer*

JOHN
AU



Bank Job

One Montgomery Street
San Francisco, California
Willis Polk and Charles Gottschalk, Architects
Luminae Souter Lighting Design

ıle were going blind in there," says lighting designer Ross De ıssi, describing the situation that brought him to the flagship loca- ı of a prominent California bank. "So everyone on the teller line ıught in their own task light—they were all different, which just w attention to how bad the lighting was."

Alessi's firm, Luminae Souter, was hired to design task lights for entire teller line. "In the process, I showed the facility manager t the new teller-line lighting just scratched the surface in terms what we could do to improve the lighting. We did a large-scale ckup of the space for them, which led to a complete overhaul of lighting system."

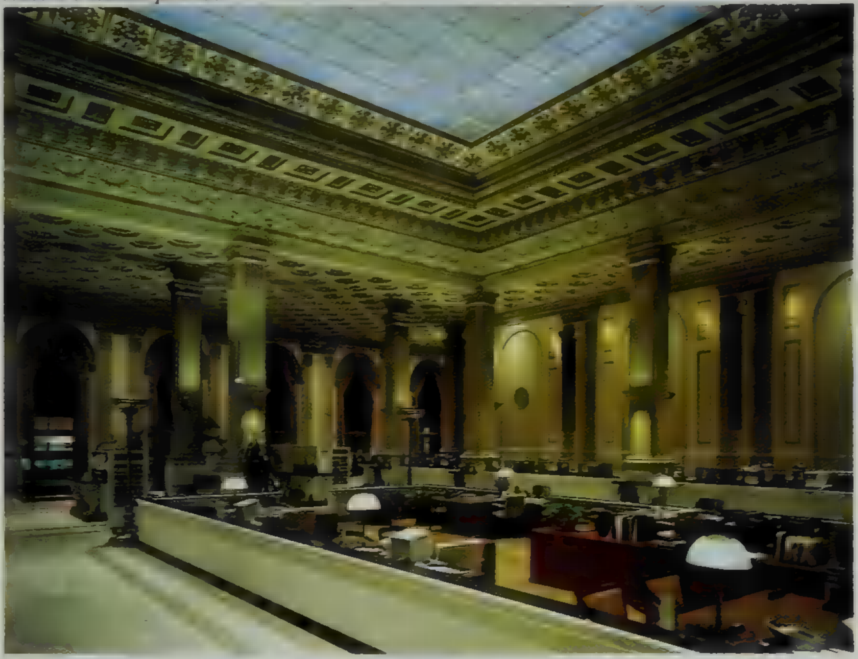
t went a system of deteriorated recessed metal-halide downlights h 12-in. apertures that had been punched in random locations all r the ceiling. De Alessi replaced them with dimmed 6-in. 250W l 500W quartz and 100W halogen IR downlights that graze bas- ef plaster panels, walls, and shallow arches around the perimeter he space.

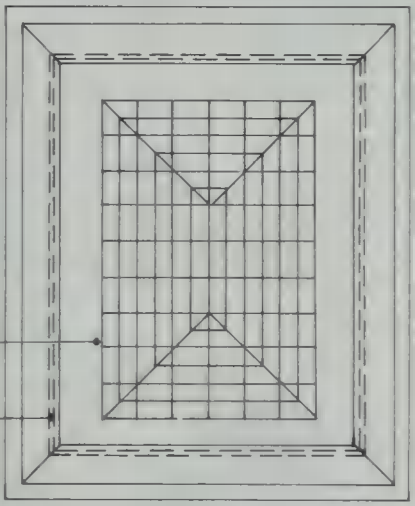
isting fixtures in plaster sconces and brass torchères were re- ved and replaced with white high-pressure sodium uplights fitted h asymmetric reflectors. These flood the coffered ceiling with y warm light that is particularly good at bringing out the gold- fed details. Sconces located over check-writing desks received an litional PAR20 downlight.

frosted-glass false skylight had a continuous row of fluorescent ips around its perimeter—but alas, no surface to bounce their ıt through the glass. Luminae Souter designer Leif Johnson de- ed a suspended ceiling tile structure for this purpose (detail, ow right) and had the strips lamped with daylight-colored tubes l re-aimed.

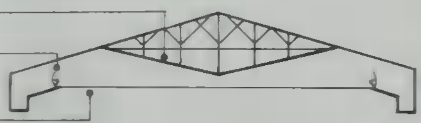
gain enough energy credits for the installation of the halogen l fluorescent task lighting under California's Title 24, downlights he window bay and drapery accent lights are controlled by photo- ls. The rest of the lighting is controlled by a four-scene preset ıming system. *Charles Linn*

Ross De Alessi photos





SKYLIGHT PLAN

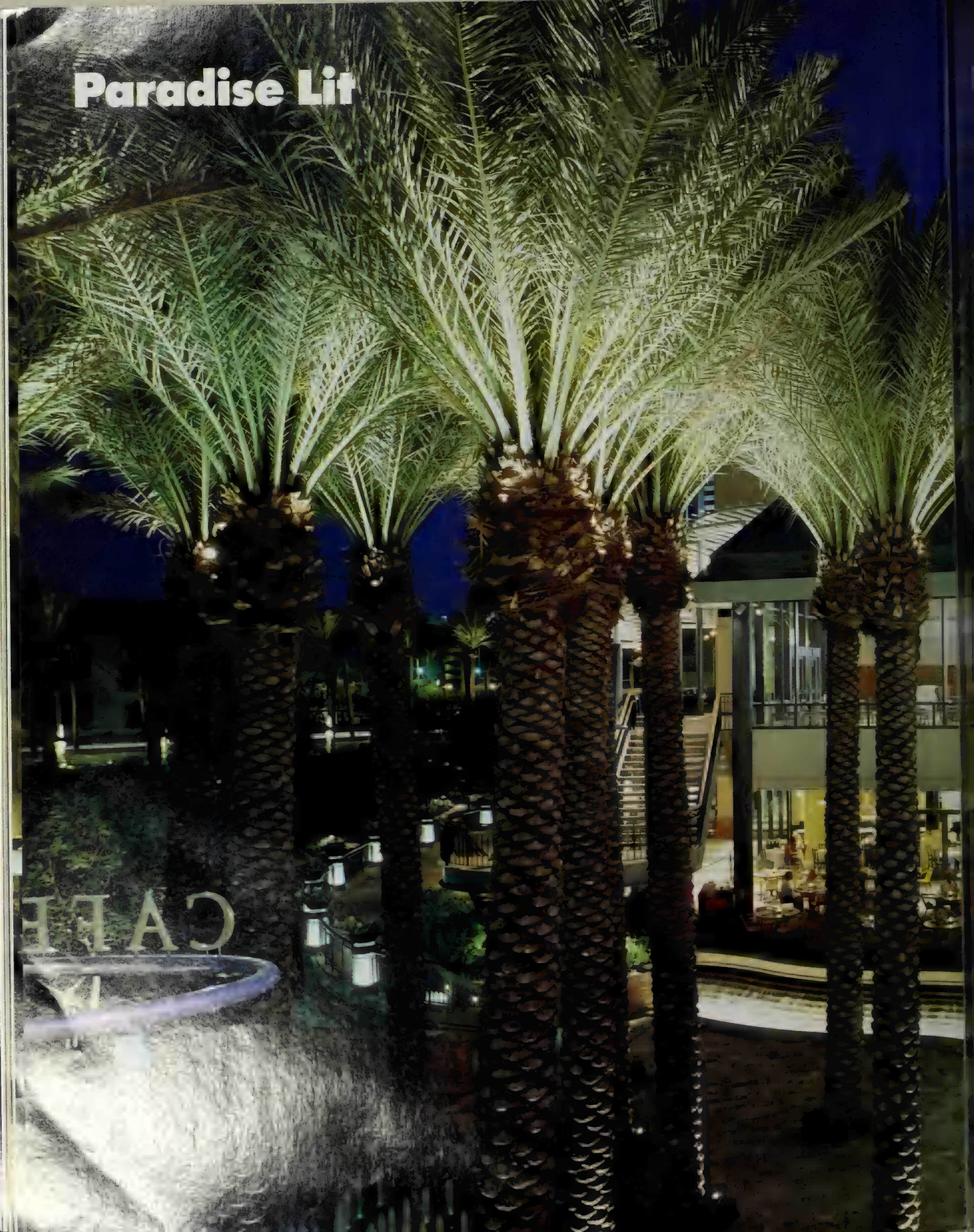


SKYLIGHT SECTION

artz downlights that wash -relief panels and arches are anced by white HPS uplights ıcealed in torchères and nces (opposite and above ht). To bounce light through ıux skylight from a existing of existing fluorescent ips, a huge reflector made of -in ceiling panels was built oto and details right.) Day- ht-colored lamps replaced the ginal cool whites.

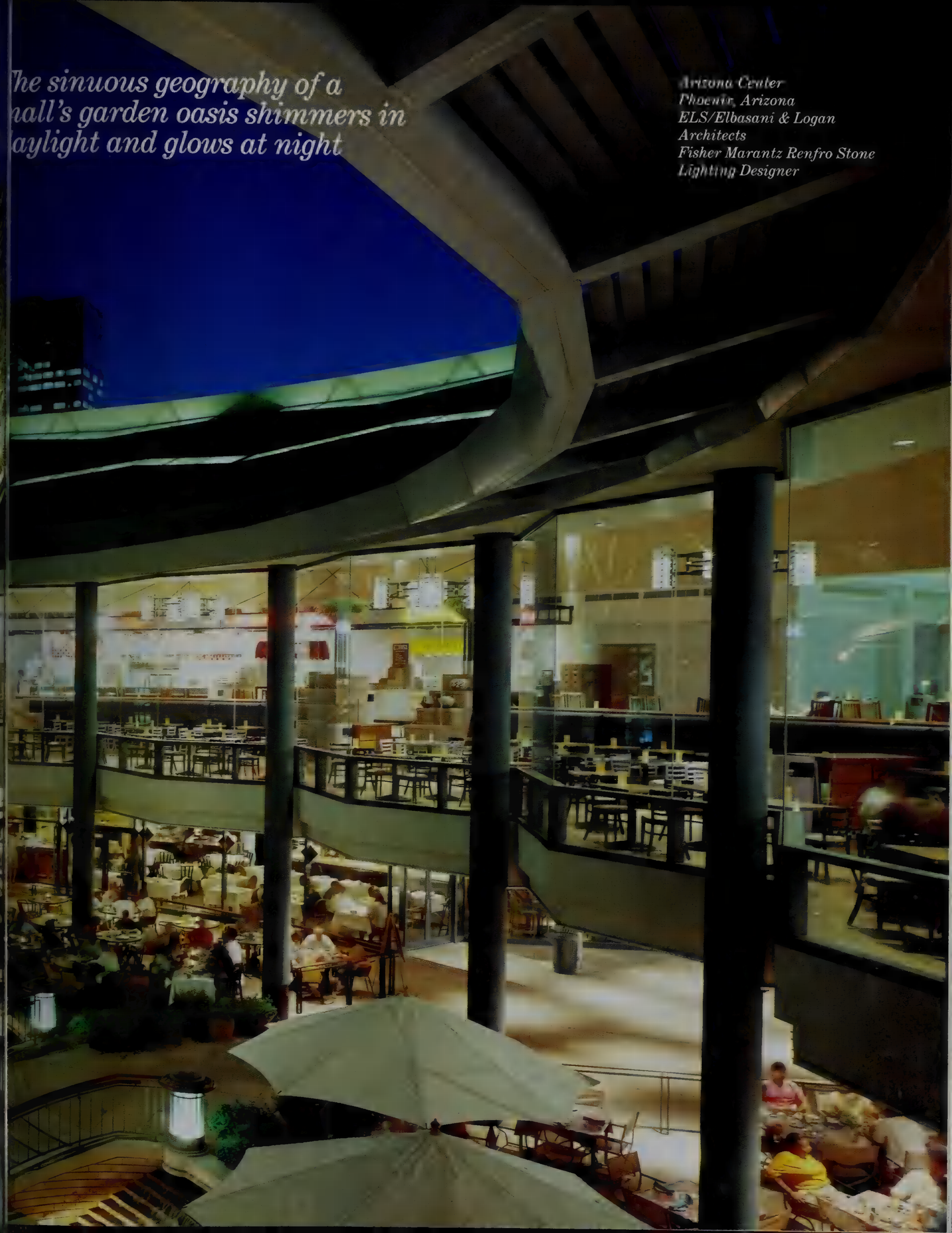
Credits
One Montgomery Street
San Francisco, California
Owner: *Withheld by request*
Architect: *Willis Polk, Charles Gottschalk*
Lighting Designer: *Luminae Souter Lighting Design; Ross De Alessi, principal-in-charge; Leif Johnson, designer*
Contractor: *Rosendin Electric; Mark Lynch, project manager*

Paradise Lit



he sinuous geography of a all's garden oasis shimmers in aylight and glows at night

Arizona Center
Phoenix, Arizona
ELS/Elbasani & Logan
Architects
Fisher Marantz Renfro Stone
Lighting Designer



is difficult to imagine the soft soil and leafy coolness of Eden existng in a retail mall in the middle of downtown Phoenix, Arizona. But hen the team of ELS/Elbasani & Logan Architects, with lighting esigners Fisher Marantz Renfro Stone, landscape architect the WA Group, and graphics consultant Communication Arts extended he office space and accompanying landscape of the Arizona Center o include retail shops and dining, they borrowed the most paradise-ke qualities from the Biblical garden for daytime relief and ighttime comfort.

uring the day, curves and niches in the building forms, inspired by he nautilus-shaped garden, catch cool breezes and create calming hadows while the dazzling sunlight shimmers on signage and fabic. At night the garden is lit with the warm glow of incandescent, so atrons of the dining and retail arcade overlook a living, inviting lanern, a safe oasis in the desert. "We let the sinuous geography of the arden serve as a motif for the entire garden," says Henry Beer of ommunication Arts.

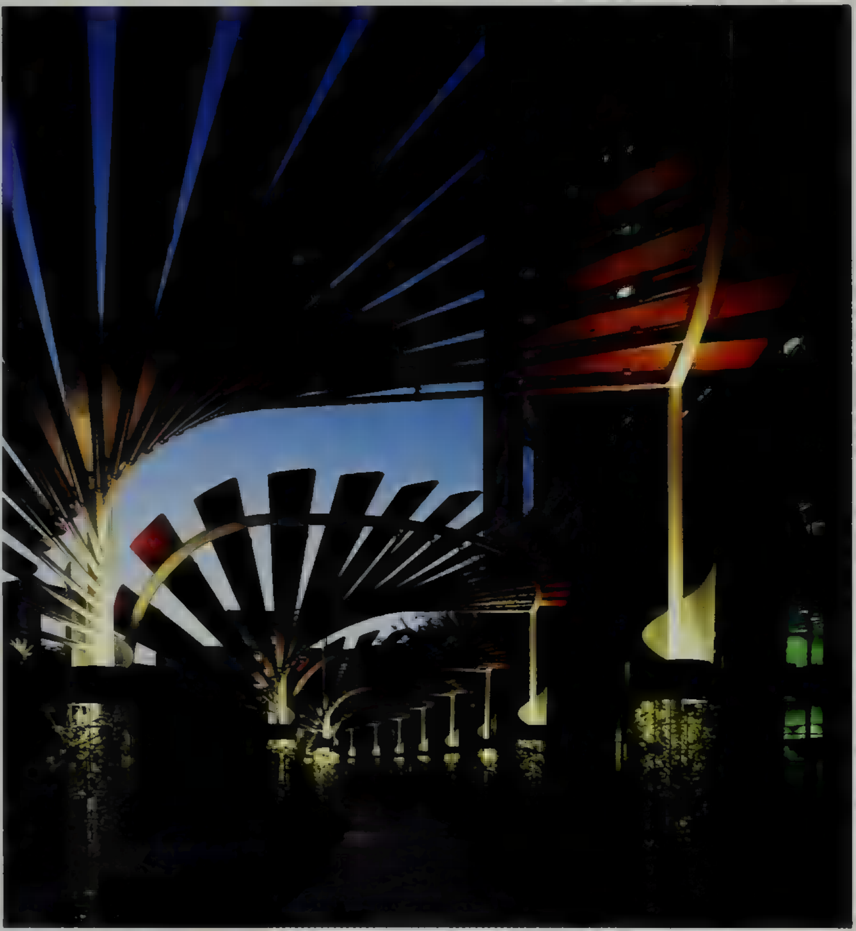
t night, burial uplights with 150W quartz PAR floods graze the runks of the palm trees, their fronds illuminated by a ring of three R16 floods. Underwater, low-voltage PAR36 fixtures trace the unulating waterfall that separates the garden from the dining area. andrail-supporting custom-made bollards lit by quartz sources dearcate the bridge over the waterfall and sidewalks, giving the lusion at first glance that luminaria have been placed there. The apanese fan-inspired trellised walkway that borders the garden is luminated by up-and-down PAR floods in generic holders, conealed inside a ribbon of metal fastened to each trellis support. The xtures light the wooden slats overhead, and light plant materials elow.

he dining area in front of the retail space that faces the garden is lled with white parasols, lit by the powerful Arizona sun by day nd uplit by fluorescent strips at night. The canopies covering the econd-floor balconies echo the Japanese-fan theme established in e garden. They are uplighted by exterior lampholders and 150W 40 floods fastened to the canopy support posts.

ocal codes would have restricted the size of the logo on the corner f the building, so part of it was designed as an architectural lightng feature instead—inspired, says Beer, by a stop-action hotograph of water droplets hurled into a vortex-shaped trajectory y a sprinkler-head. To replicate the effect in light, vapor-proof ndustrial fixtures were mounted in circular openings in the stucconished wall. The fixtures were lamped with 13W compact uorescents, and silver-leafed on the ends to reflect the light back oward the building and punctuate each fixture. *Debra Woodruff*

ebra Woodruff is a freelance writer based in Eugene, Oregon.

redits
rizona Center
hoenix, Arizona
lient: *Rouse-Arizona Center, Inc.*
rchitect: *ELS/Elbasani & Logan Architects—Barry Elbasani, arol Shen, principals-in-charge*
ighting Designer: *Fisher Marantz Renfro Stone Inc.—Paul arantz, principal-in-charge; Susan Brady, associate*
raphics: *Communication Arts—Henry Beer, rincipal-in-charge*
andscape Architect: *The SWA Group*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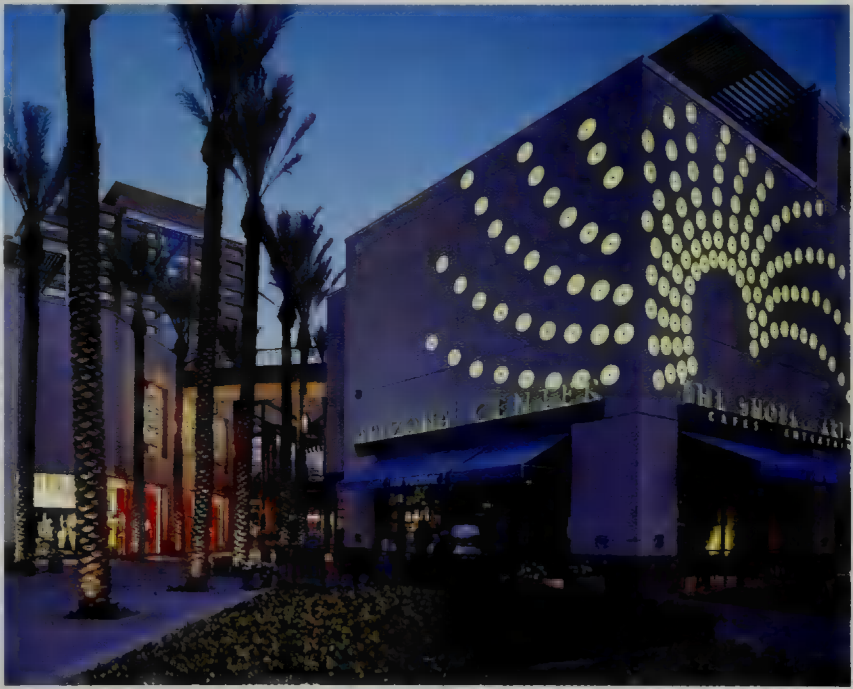
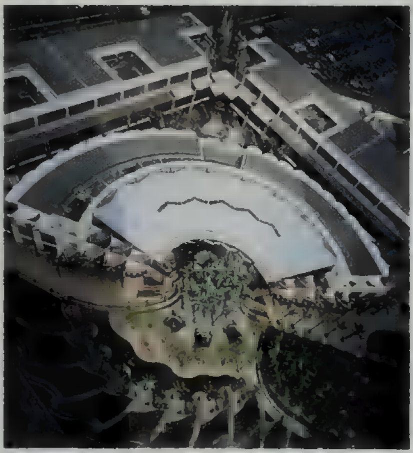


2

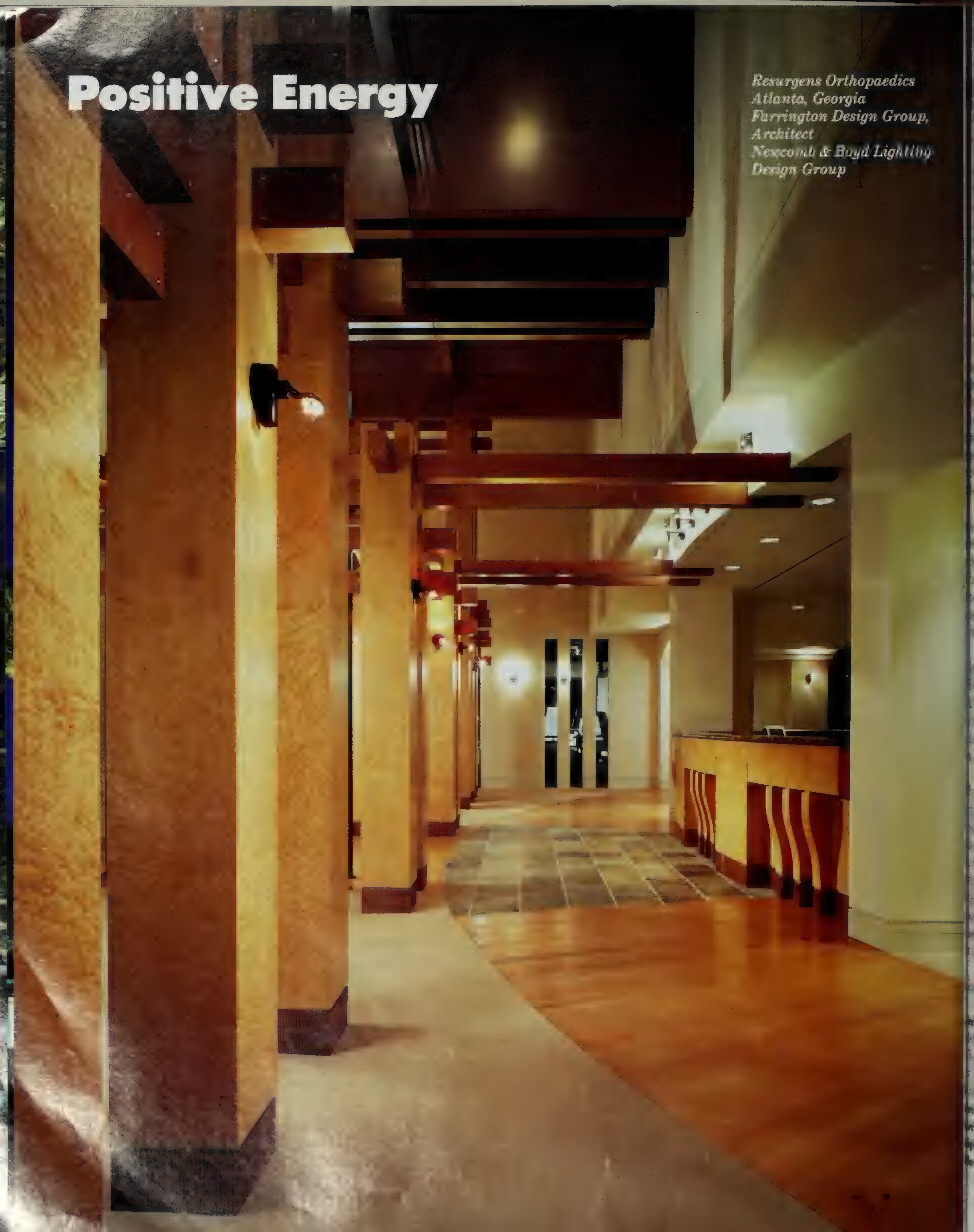
Tim Hursley


Tim Hursley

Arizona Center (aerial view, left) is a retail office complex covering eight blocks in downtown Phoenix. The garden with palm trees and water features is the complex's centerpiece. Uplighted palm trees and canopies provide soft, inviting night lighting (1). The sprinkler-inspired building logo is punched out by compact fluorescent lamps in vapor-proof industrial fixtures (2).

Positive Energy

Resurgens Orthopaedics
Atlanta, Georgia
Farrington Design Group,
Architect
Newcomb & Boyd Lighting
Design Group



John Garrett did not want to practice in a box. For his medical
roup's new offices, he sought to creatively explode conventional
hinking about medical architecture. Daylighting and views, for ex-
mple, were a top requirement—and not just a token window or two.

ortunately, the ninth-floor tenant schematics were planned while
ne speculative base building was still under design. Coordination al-
owed the interior design and architecture team, including Hiro
sogai, Sheila Nall, and Mack Hicks, to introduce significant struc-
ural departures from a typical doctor's office. Most impressive is
ne skylit two-story waiting room. Massive, but beautifully clad
eams and columns convey a strong, solid presence in this uniquely
elcoming space.

ighting designer Gerald Cunningham favored incandescent lamps
or most areas of the project, selecting a variety of low-voltage halo-
en fixtures and an A19 sconce. "We wanted to help visitors
ppreciate the exceptional materials, to bring out their color and vi-
rancy," he explains. An Italian-designed sconce graces the
eception area (opposite), then recurs throughout the offices in
ooms such as a nurses' station (center right). The sconce provides
leasing ambient light in addition to a bit of sparkle through its per-
orated shield. "Touches like these generally make people feel
etter, a little bit more positive and energetic," says Cunningham.

nother frequently recurring fixture is a simple, relatively inexpen-
ve MR16 lamp holder. Mounted on columns, the fixture lights
rculation pathways and provides a decorative effect with the color-
l backwash from the MR16's dichroic coating. "This fixture and
etal are exposed," remarks Isogai. Placed on the rich wood col-
mns, the fixtures seem to reveal structure while arranging
urfaces for visual effect.

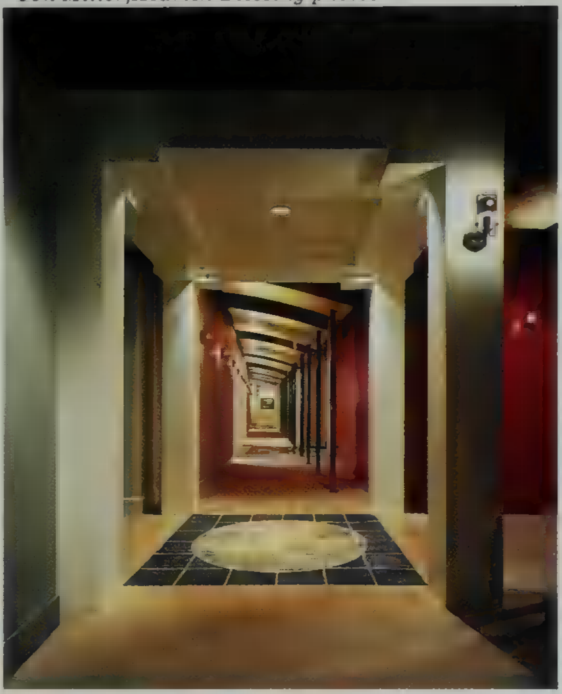
uartz PAR38 lamps play several utilitarian roles in the offices.
AR lamps in tracks hug skylight perimeters to provide supplemen-
l lighting as needed. In downlights, they illuminate the reception
ounter (opposite) and conference room (bottom right). The lamps
so provide extra brightness to do justice to slate and wood flooring
a corridor junction (top right).

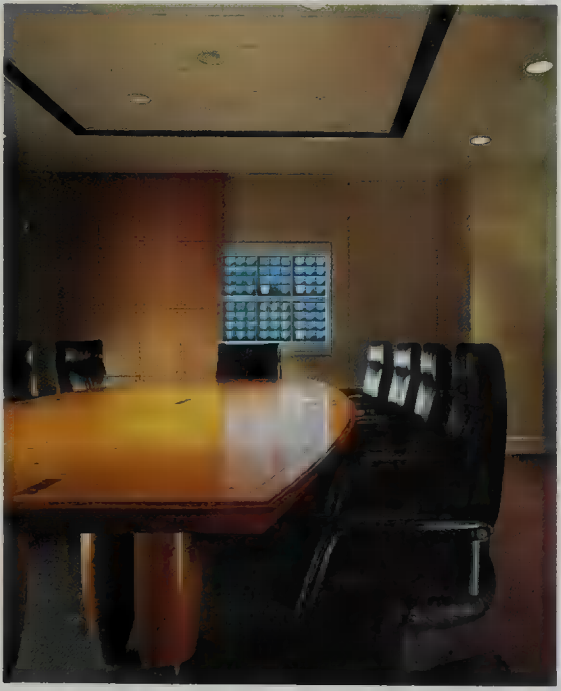
ypical two-by-four fluorescent lay-ins aren't absent from the
roject, but are largely confined to staff areas and examination
oms. The upbeat mixture of daylight and incandescent prevails in
e sequence of spaces visited by most patients, from elevator lobby
reception and waiting areas to corridors. Examination rooms have
indows as well as 3500K triphosphor fluorescents. "Lighting in all
ese areas has the same feeling, the same profile," says Isogai. Pa-
ents seem to enjoy the surroundings, and Dr. Garrett certainly
oes. "I can't wait to get up in the morning," he says, "to go to work
the marvelous new office." *Gareth Fenley*

areth Fenley is a freelance writer based in Atlanta.

edits
esurgens Orthopaedics
e Center for Specialty Medicine
St. Joseph's Hospital
lanta, Georgia
rchitect, base building: *Cooper Carry & Associates*
rchitect, tenant space: *Farrington Design Group*
ghting Designer: *Newcomb & Boyd Lighting Design Group*
ectrical Engineer: *W. L. Thompson Consulting Engineers*

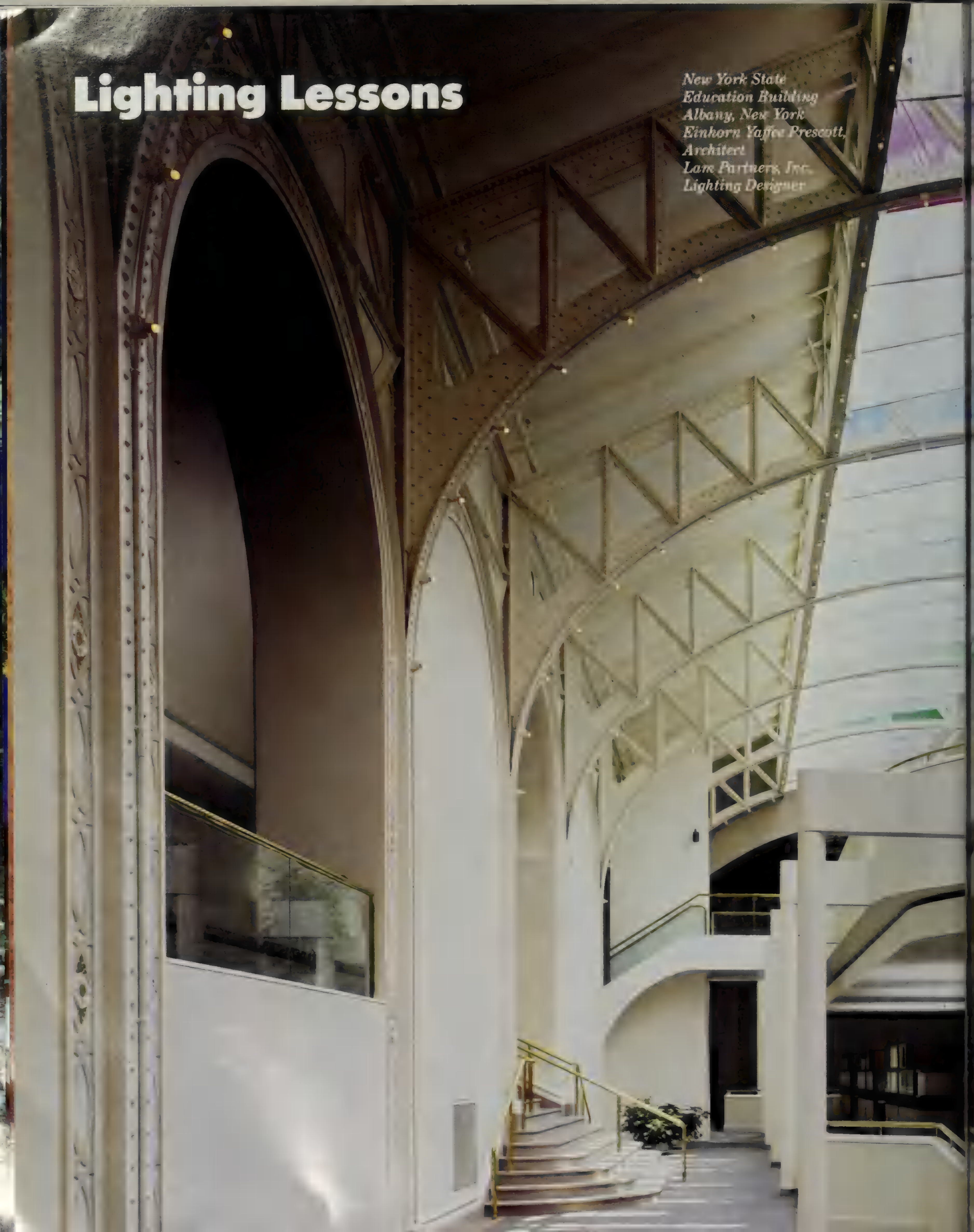
Jon Miller, Hedrich-Blessing photos





Lighting Lessons

New York State Education Building
Albany, New York
Einhorn Yaffee Prescott, Architect
Lam Partners, Inc., Lighting Designer



An old building learned a few new tricks when a 1908 museum became a 1991 education office.

Twenty years ago, the New York State Education Building was flunking. Eager to get out of its deteriorating interior, its occupants were fleeing to new buildings. The fifth floor soon emptied of exhibits as the state museum was relocated. The monumental landmark designed by architects Palmer and Hornbostel in 1908-1912 needed a remedial course. And thanks to pressure from preservation groups, New York State set out to provide it.

Einhorn Yaffee Prescott were selected to plan a restoration and adaptive use of the former museum area. The firm surveyed existing conditions, then hosted a three-day kick-off meeting at the site, with clients and consultants participating. "We positioned a cross-disciplinary team working together to generate concepts right at the original orientation meeting," recalls architect Steve Einhorn. "And what we did in those few days is what got built. There was very little drift from the original concept." The project's lighting consultant, Lam Partners, has always championed integrated design and was a key participant from the start. "The beauty of this process is that you can come up with a strong initial concept, and that if you get all of the relevant players involved in that concept, it will survive," explains lighting designer Bob Osten.

The strong concept here was a mezzanine with an undulant plan. Inserted into each of the floor's three main volumes, the mezzanine satisfied many goals: expand floor space by 25 percent (the client's requirement), retain openness and historic integrity, and allow maximum use of daylight. Structurally, the mezzanines posed substantial problems: the building could not support their additional weight, nor did it have columns where they were needed. These obstacles were surmounted by removing heavy nonstructural concrete decking from the floor, using lightweight new construction balanced by dynamic tuning, and extending unbraced outriggers to structurally sound positions.

Throughout the fifth floor, ambient lighting is a calibrated mix of daylight and indirect electrical sources. In the north wing, a high-quality daylighting system typical of old museums was revived and improved. Above each flat-glass ocular laylight, an enclosed light well got a fresh coat of white paint; and atop that chamber, a new pyramidal skylight was installed, with only one face glazed to cut heat gain. For evenings and cloudy days, the designers hung a custom 1000W metal-halide pendant beneath each oculus. Decorative incandescent lamps in all three wings are rewired, dimmed replacements of historic originals. Says electrical engineer Bill Bush of the system: "It looks really good when it's all fired up." The successful reuse of the fifth floor has passed the financial test, too. Its cost is expected to be amortized in 10 years. The state has funded two more major adaptive-use projects within the building. *Gareth Fenley*

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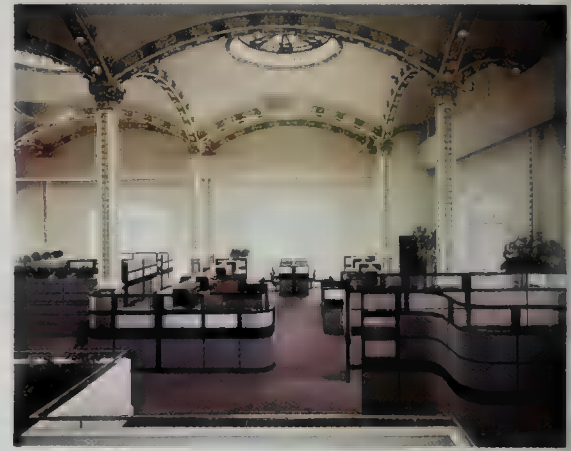
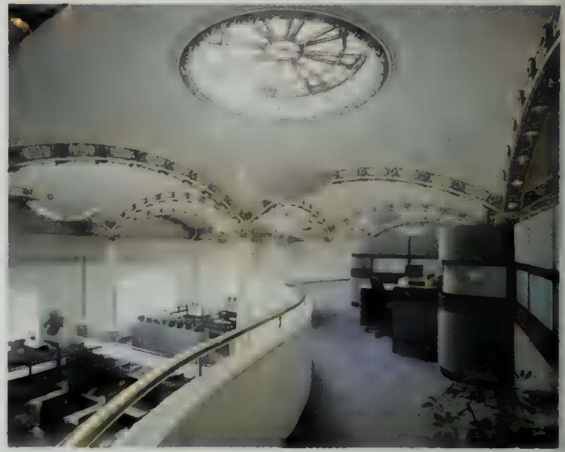
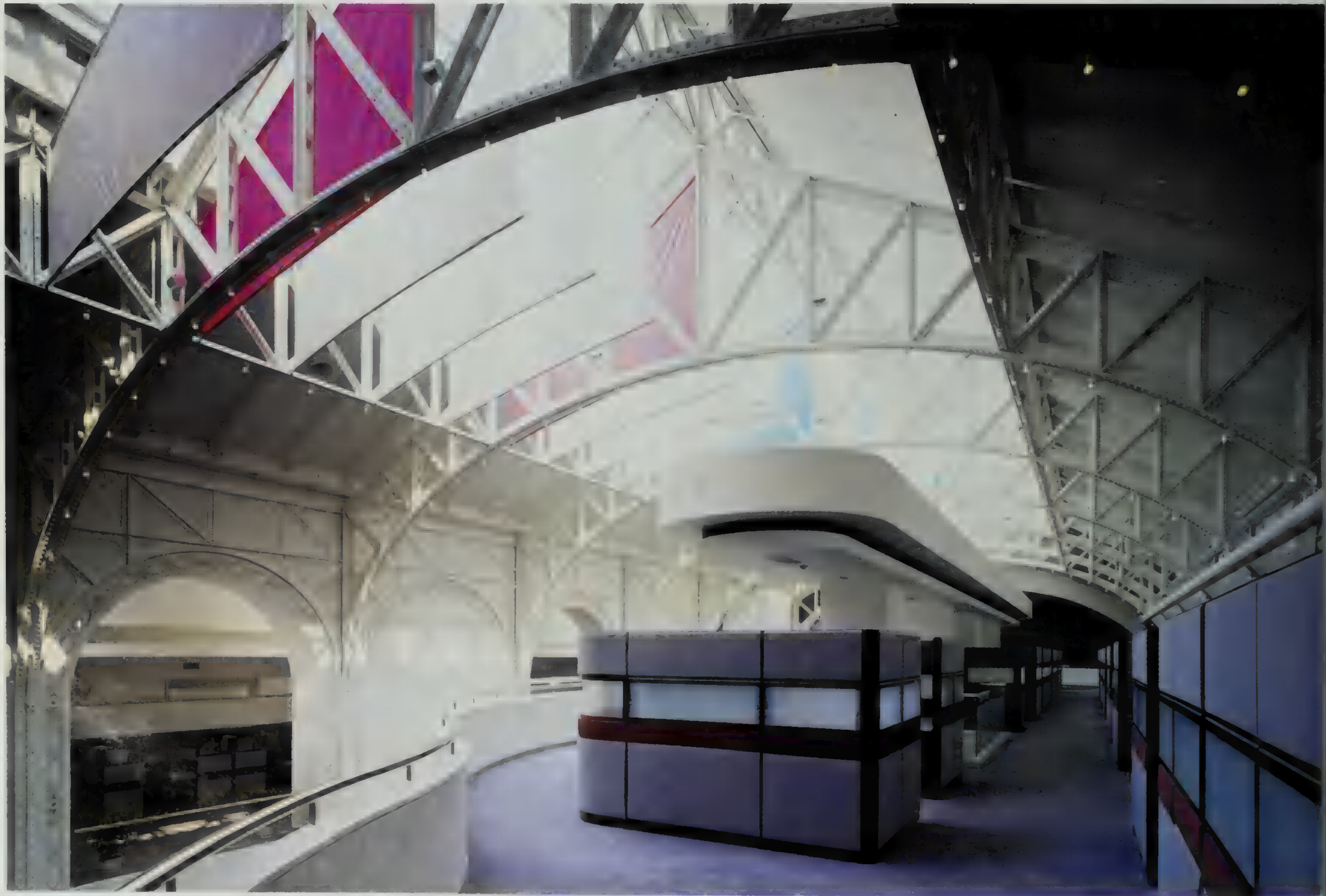


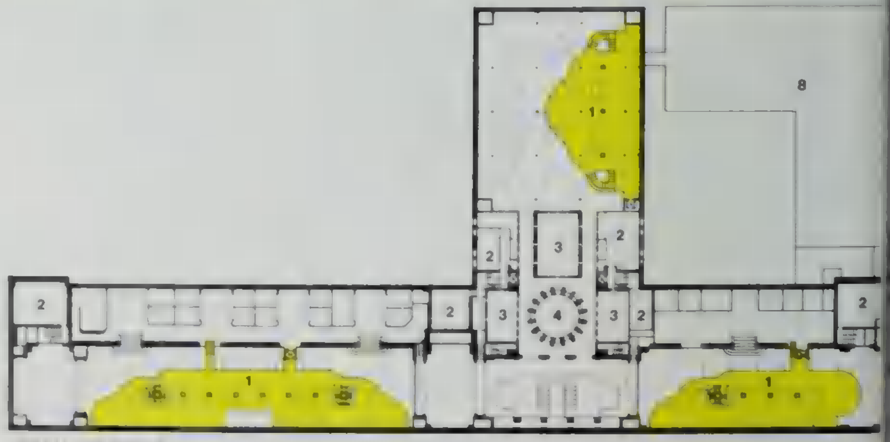


Its south edge borne by a 520-foot-long Corinthian colonnade, the fifth floor today houses 95,000 square feet of offices in what was once 75,000 square feet of exhibit hall. The architects won new space by inserting sinuous mezzanines. In the north wing (photos above and opposite), windows were enlarged, while historic ocular laylights and decorative incandescents were rehabilitated. New metal-halide pendants and fluorescent coves (built around existing drain pipes) provide supplementary indirect lighting.

Once a pair of vast, dim, echoing volumes, the east and west wings now are splendid workplaces. The most conspicuous daytime light source is an axial skylight. Its tarred-over gable was rebuilt with only the north face glazed. Fabric banners catch most direct sunlight, allowing a bit to splash playfully through exposed steel trusses. In the photo below, sunbeams enliven a path in one formerly enclosed area (far left) where a blind arch has been opened. Fluorescent lighting on the wall seen through the top of the arch helps visually balance the much brighter daylit main space. The design team used scale models to help refine mezzanine forms with natural light in mind. Some reflected daylight even bounces under the mezzanines and into private offices (center photo), thanks to glass transoms. The principal light source for thes offices, however, is indirect flourescent. In open-plan area under mezzanines, there are fluorescent uplights along the walls and metal-halide fixture hidden in partitions and furn ture (see title page photo). High-wattage fluorescent uplights are also concealed in overhead service canopies that



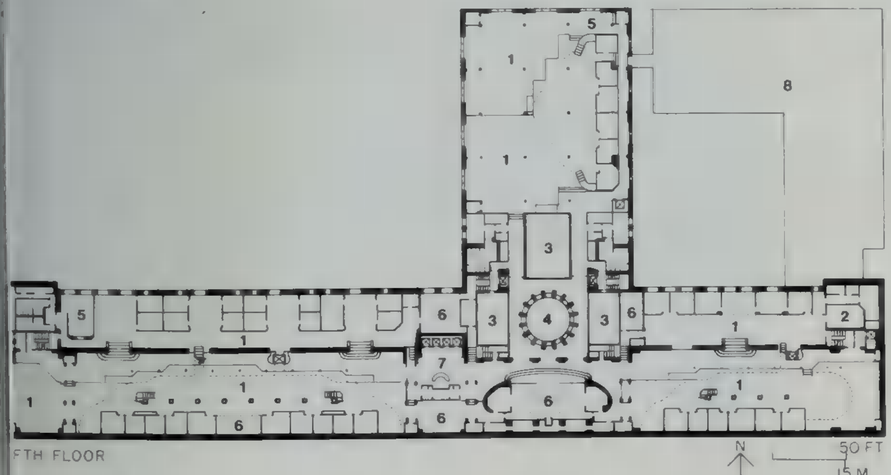
1. Open office
2. Mechanical
3. Light shaft
4. Rotunda
5. Lounge
6. Conference
7. Reception
8. Existing annex



MEZZANINE FLOOR

over along the mezzanines, olding hvac systems and pro-iding a human scale. Virtually the only obtrusive utility is a drainpipe original o the building (center photo). The designers used it as an-other location for mounting luorescent lighting.

Credits
Fifth Floor Adaptive Use/Restoration
New York State Education Building
Albany, New York
Architect: *Einhorn Yaffee Prescott, Architecture & Engineering—Steven Einhorn*
Electrical Engineer: *Einhorn Yaffee Prescott, Architecture & Engineering—Joseph Mangan and Bill Bush*
Lighting Designer: *Lam Partners, Inc.—Bill Lam, Bob Osten, and Paul Zaferiou*
General Contractor: *Sweet Associates*



TECHNOLOGY FOCUS:

The Jewelry Of Architecture

Decorative light fixtures are essential for illumination—and add sparkle, style, and refinement to rooms as well.

By James Robert Benya

Decorative and ornamental lighting is one of the most important aspects of lighting design. Decorative luminaires are essential not only for illuminating space, but are themselves elements of the architecture, landscape architecture, and interior design. (It's hard to imagine an elegant dining room without a chandelier.)

Glance through recent lighting catalogs to see the influence of top designers and Postmodernism on major manufacturers' standard product lines. From well-known lighting companies to specialty manufacturers, designers can choose from an array of decorative styles. Wall sconces have become extremely common, and many now use compact fluorescent lamps.

There also are a number of custom-lighting-fixture companies throughout the country. Prior to the custom-lighting renaissance, most made hotel chandeliers and church lighting. Now custom chandeliers and sconces grace government buildings, major highrises, and shopping centers. Some lighting-design firms are noted for designing custom fixtures that capture an architect's or designer's vision. In a few cases, the fixtures are one-of-a-kind illuminated works of art, integrating lighting design, architecture, and sculpture.

Types of decorative and ornamental lighting

- *Chandeliers.* The word "chandelier" comes from the Latin for candle, *candela*, and describes "a branching structure to hold candles," generally hung from the ceiling. Today, chandeliers are usually ornate ceiling-hung fixtures in traditional styles and materials, and in large scale for formal rooms such as foyers, dining rooms, ballrooms, and grand hallways.

- *Pendants and Pendaliers.* The word pendant means "a hanging ornament," from the Latin *pendere*, which means "to hang." By modern convention, light fixtures hung from the ceiling are called pendants if they are not formal enough to be chandeliers. Pendants generally are suspended far enough from the ceiling by a fairly lengthy chain, stem, or wire-suspension system. "Pendalier" is an invented word for a pendant fixture.

- *Close-to-Ceiling.* For ornamental lighting from lower ceilings, pendants with very short suspension lengths are called "close-to-ceiling" fixtures.

- *Surface Fixtures.* Lighting fixtures designed to mount directly onto a ceiling are "surface" or "surface-mounted" units. While surface fixtures are generally not ornamental, there are a few important styles and applications. These are used where a less-formal fixture i required as in a side hallway, bedroom, or closet.

- *Sconce.* From the French word *esconce* comes "sconce" to describ an ornamental bracket fixed to the wall "to carry a light." Like chandeliers, sconces evolved from candles and torches, and the wor "sconce" is now used to describe virtually any style of decorative wall light, especially indoor fixtures.

- *Wall Bracket.* Virtually synonymous with "sconce," "wall bracket" is usually used to refer to outdoor decorative luminaires a well as for wall-mounted fixtures of more simple or modern style.

- *Table and Floor Lamps.* Derived from the Greek word for torch, *lampas*, the word "lamp" traditionally describes table- or floor-lam fixtures that are portable luminaires using shades to shield the ligh source from view. Other styles of table and floor lamps have their own names, such as desk lamp or torchère.

Mr. Benya is director of Lighting and Daylighting for Proven Alternatives, Inc.

The role of decorative and ornamental lighting

The tradition of providing light for interior spaces from ornamental holders is consistent with most cultures worldwide. Regardless of where you are, there is a popular form of ornamental light holder, whatever it might be. The European influence on American architecture and design makes us simply more conscious of these traditional influences.

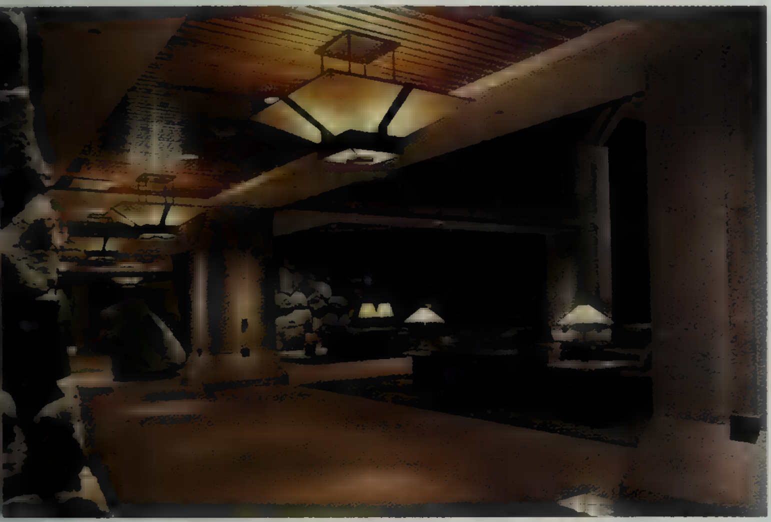
There are three primary reasons why it's important to use decorative lighting properly:

- *Style or Motif.* Probably the most straightforward reason for using ornamental and decorative lighting today is to provide lampholders that appropriately complement the architectural desig A modern Italian pendant, for instance, is appropriate in a dining room with black lacquer or glass-top furniture; a crystal chandelier of traditional design, however, suits a paneled dining room with an early American influence.

- *Visual Cues.* A "visual cue" communicates a specifically desired thought or response through a design element. Decorative lighting is especially good for this. For instance, we use traditional chandeliers and sconces to communicate a sense of formality, using them in foyers, hallways, and dining rooms—and seldom elsewhere We often use lights outdoors to delineate a pathway.

- *Cultural Standards.* There are some things we do simply becaus they seem "right." For instance, it seems we always have a chandelie

ecorative lighting fixtures are
e jewelry of architecture. The
ass and brass pendants (1)
ot only add up- and down-
ght to the space, but also
mplement its architectural
eme. Likewise, the glass
andelier (2) is appropriate
r the traditional dining
om, and the slumped-glass
me (3) in context for the
ntemporary one.



Photos courtesy of Luminae Souter Lighting Design

over the dining-room table, and a table or swing-arm lamp on both sides of a bed. Naturally, these things vary from place to place so it's important to be consistent with the norm wherever you are.

The jewelry of architecture

These qualities are analogous to wearing jewelry. Just as jewelry sparkles and glows, catching the eye as the brightest element in the environment, so decorative lighting does for architecture.

Jewelry is used in many the same ways as lighting: style, visual cues, and cultural standards are especially obvious in its wearing. If the lighting designer understands this relationship, he or she will appreciate the uses and restraint necessary for ornamental and decorative lighting. In particular, ornamental lighting, like jewelry, can be as inappropriate in a design contextually as pop jewelry is with formal evening attire. Common errors in decorative-lighting design include wrong style, too many fixtures, fixtures too small or too large, and the opposite: failure to use decorative lighting when it is called for.

Special design problems

Decorative-lighting is distinguished by being completely exposed, limiting photometric control options. In fact, most decorative lighting does a poor job of distributing light. Designers must deal with these weaknesses in applications.

By far the most common problem is that decorative light fixtures emit diffuse light, which produces uncomfortable glare and flat, uninspiring illumination. Some decorative lighting utilizes point sources like clear incandescent lamps to achieve sparkle but, conversely, also create glare.

Decorative-lighting fixtures often can't accommodate optical systems designed to improve light quality. The need to glow evenly or to sparkle in a certain way is the essence of decorative lighting; but introducing glare-control hardware often defeats the appearance of the fixture. Only a few designers of modern fixtures employ state-of-the-art optics. Most modern fixtures, especially European, and virtually all traditional fixtures, are glare-bombs.

To counteract the poor qualities of decorative lighting fixtures, the designer must employ other light sources. Downlights, accent lights, cove lights, wallwashers, or other luminaires are necessary to create an attractive, well-lighted environment.

Lighting by layers

In the basic layering approach, the designer composes a visual hierarchy in which brightnesses are ranked. For instance, the

Flat walls and ceilings seem ordinary and uninspired. Breaking up planes, adding coves, coffers, and recesses, and accenting them with light creates drama and adds interest.

fixture may be brightest, followed by the walls, then the ceiling, and finally the floor. Such a concept suggests significant use of wallwashing in the overall design.

Another way to imagine layering, however, is in footcandle levels. For instance, in designing hotel function space, a typical layering scheme might be:

Chandeliers and sconces	10 fc
Downlights	10 fc
General illumination (cove)	30 fc

When needed, all lights on will produce 50 fc of illumination, which is the maximum illumination needed in many major hotels. Moreover, the design will yield an attractive, well-balanced space which, through the use of direct and indirect illumination, is relatively immune to the choice of decorative lighting. No matter what the interior designer chooses, the space will work.

Illusion is the process of using a decorative luminaire, such as a chandelier, while uplighting the ceiling from a concealed source, usually a cove. The balance of brightness mitigates any potential glare from the chandelier, and offers considerably more illumination potential. By adding small-aperture downlights, an object below—a table centerpiece, for example—can be made the brightest object in the composition. This is often desirable in the highest quality spaces.

The lighting designer can use computer programs to help develop these visual hierarchies. By predicting the various surface brightnesses of the room, the designer can be assured that the composition is correct. A perspective illustration of the effects of the various lighting elements will dramatically reveal the design's results. Note that advanced knowledge of computer-aided-design skills will probably be needed here: most decorative lighting doesn't have photometric data, so you will need to simulate the decorative lighting somehow.

Designing the ceiling

Particularly with chandeliers and pendants, the ceiling design is critical. Flat ceilings offer little opportunity for illusory design tactics, such as cove uplights. Lighting designers often need to prod the architect into multiple planes and levels.

The coffered ceiling is an especially good way to conceal other sources while showcasing a chandelier or pendant. Cove lighting, with either modular incandescent in residential or dining areas, or fluorescent in hotel or office lobbies, generally guarantees the chandelier will not be too bright. Dimming both sources allows the user to balance them.

When the depth for coffering isn't available, consider breaking up the ceiling place with moldings, steps, and soffits. Moldings, for example, will pick up a shadow line exaggerating the change in plane height. Cornices and crown moldings contribute a margin of additional elegance, and can be illuminated by the uplight component o a sconce.

Designing the wall

Like flat ceilings, flat walls seem ordinary and uninspired. Changes in plane and shape make walls more interesting; accenting the changes with light creates drama and interest.

While wall sconces and brackets seldom dramatize walls, their role as wall ornament is essential. To look best, sconces should be mounted two-thirds of the way up from the floor, adjusted accordin to the design of the wall itself. Designers should take care that sconces are not mounted too low, or visible from an unflattering angle. Many open-top sconces mounted in stairs or atria have their "guts" visible from above.

Sconces can also be used in conjunction with an architectural wall feature, such as a pilaster or niche, to play a significant role in architecture. Such designs show the integration of lighting design int the architecture, an indication of a true "meeting of the minds."

Light sources

There is almost no limit to the lighting that can be used in decorativ and ornamental lighting. From candles and gas to most types of electric lamps, sconces and chandeliers can be designed and specified to meet the need. There are, however, a few special considerations:

▪ *Incandescent*. This is most common source for decorative lighting and is the easiest to use. It is inexpensive and has excellent color rendering. Remember that incandescent lighting is the least efficient light source, other than open flame, and tends to produce relatively hot lighting equipment.

▪ *Fluorescent*. Surprisingly, fluorescent lamps have become exceptionally useful in decorative and ornamental lighting, especially through the use of compact twin and quad lamps and high-powered biaxial twin-tube lamps. Although expensive to dim, fluorescent sources offer high energy efficiency and cool operation.

▪ *HID*. A few standard indoor products are available in metal halide a number of attractive outdoor luminaires are sold in metal halide o HPS. The biggest drawbacks to the use of HID lamps in decorative lighting are generally ballast size and noise. Remote ballasting is referred. Compact HID lamps and solid-state HID ballasts can help olve problems when integral ballasts are used.

Neon. If a designer wants it badly enough, neon's many problems an be overcome.

odes

he Americans with Disabilities Act (ADA) requires building owners) upgrade facilities, and in lighting the major concern is lighting-xture height in exit corridors. The maximum projection from the all allowed is 4-in. when mounted below 7 ft. Unfortunately, most conces exceed this. This same requirement has for some time been art of several life-safety codes, but most designers and inspectors eren't particularly concerned. With ADA, many new compact flurescent sconces with less than 4-in. projection are already on the arket.

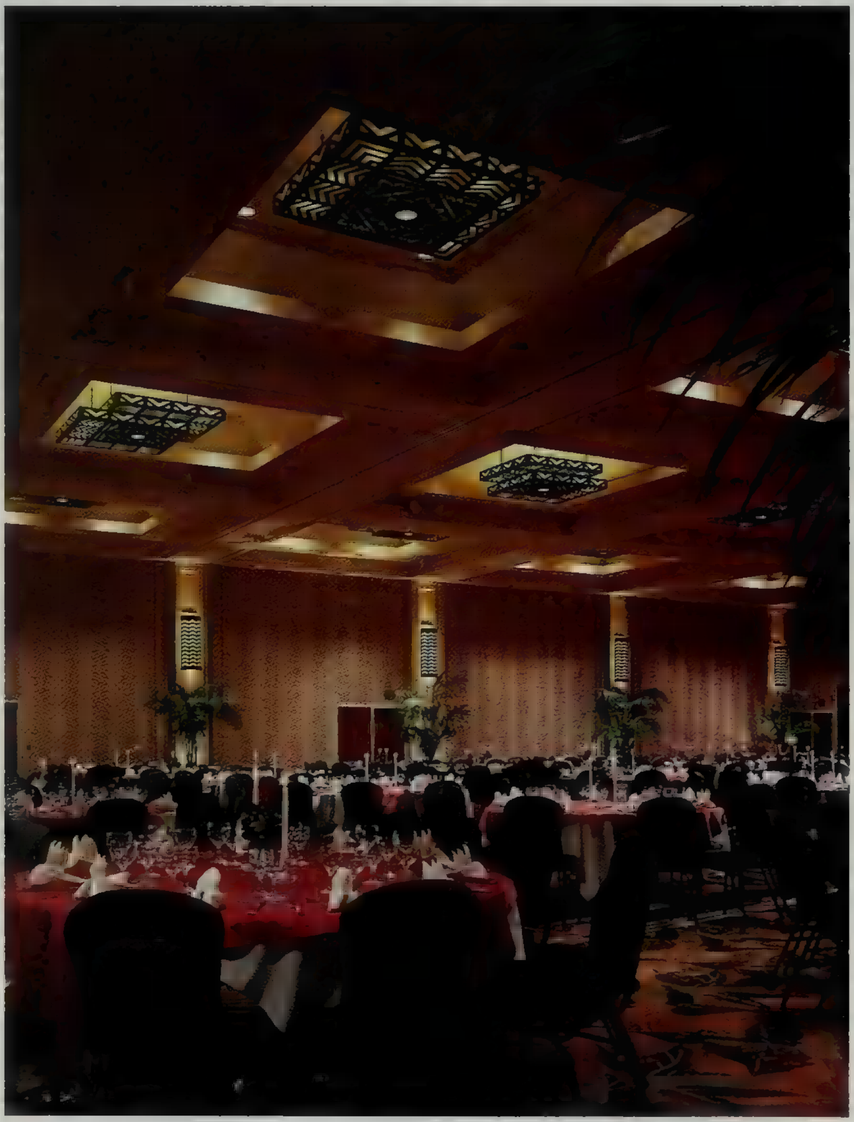
he flexibility of light source (incandescent, fluorescent, etc.) is an dvantage of decorative lighting in the rapidly changing world of enrgy codes, too. The 1992 California Title 24 limitations are fairly rict, and many hotels which were exempt from Title 24 from 1987-992 will now be governed. A lot of decorative lighting will be ermanently converted to compact fluorescent to help meet the code remodel work, and there will be a lot of compact-fluorescent conces and chandeliers in new designs.

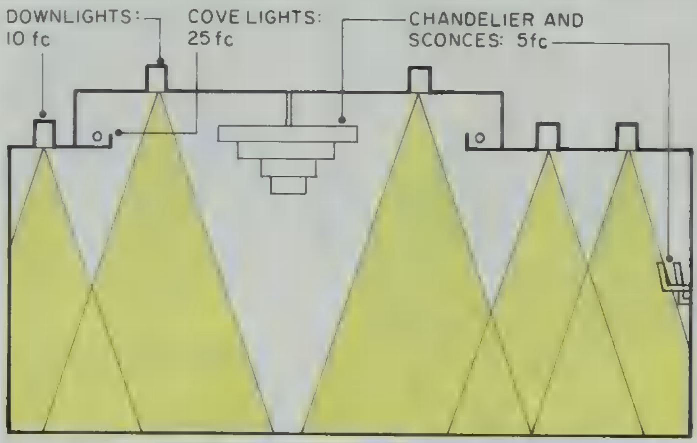
osts

ecause decorative and ornamental lighting is seen as frivolous by any building owners, its cost is an issue. The implied elegance of a andelier makes it vulnerable to downgrading during project budet management. Even in hotel projects, where the appearance of ecorative lighting is essential, owners and interior designers shop r competitive pricing and accept substitutions, such as brass-ated sheet metal in place of solid brass.

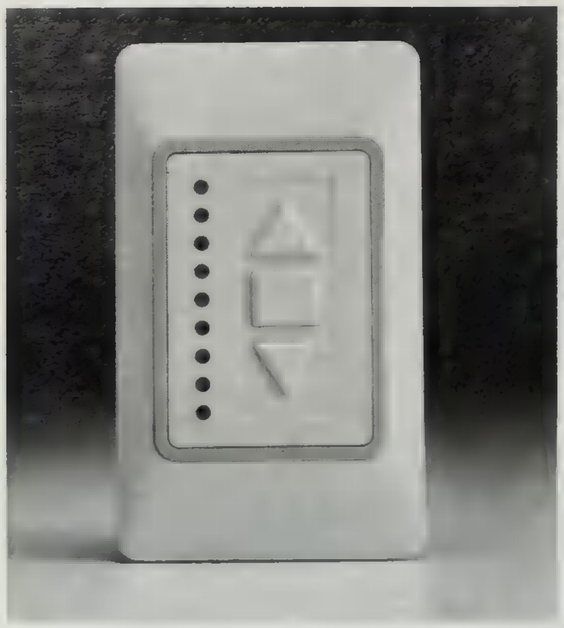
ut because it is "jewelry," decorative and ornamental lighting is ared the budget ax in many projects. It is important that the vner recognize a building must wear jewelry appropriate to its atre—a gold medallion can ruin the look of even the best tuxedo. ■

The ballroom below is an example of a layered approach to lighting the space. While the decorative chandeliers and sconces glow, providing visual accents and symbolically lighting the space, most of the ambient light comes from less noticeable recessed downlights, wall washers, and cove lighting (drawing).



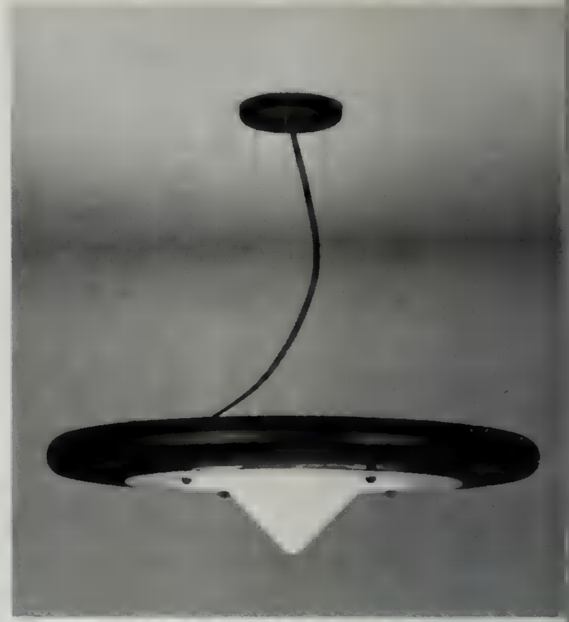


SECTION THROUGH HOTEL BALLROOM

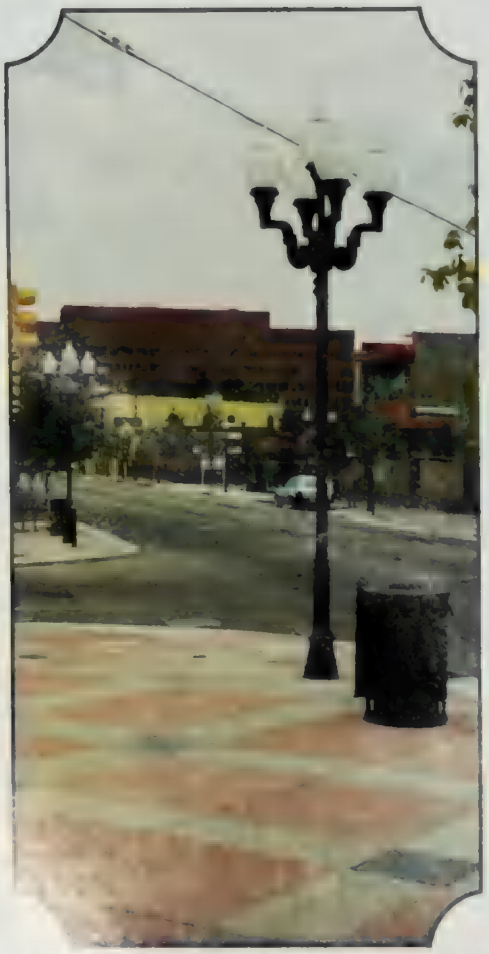


315. Low-voltage dimmer
The Impressions line of styled switchplates and outlet boxes now includes slide- and three-key touch dimmers for control of low-voltage lighting on magnetic transformers. The three-key dimmer (pictured) is capable of multilocation dimming from up to six positions. Devices come in five colors, with 16 plate and trim-ring combinations possible. Pass & Seymour/Legrand, Syracuse, N. Y.

316. Garden-path lighting
Designed to be inconspicuous while providing low-level illumination outdoors, the Trail Lite Rocker has a 20W low-voltage halogen source that casts a 40-degree beam up to 10 feet. Its realistic "stone" housing is described as lawnmower- and puppy-proof. Matching sound-system speakers available. OWI Incorporated, Compton, Calif.



317. Low-ceiling indirect
A slim, 2-in.-high ring almost 30-in. across, the Options pendant offers a new mounting method: four stainless-steel wires suspend the fixture so that it looks as if it were floating. An optional acrylic lens, available in different shapes and colors, shields the twin-tube fluorescent lamps. SPI Lighting, Mequon, Wis.



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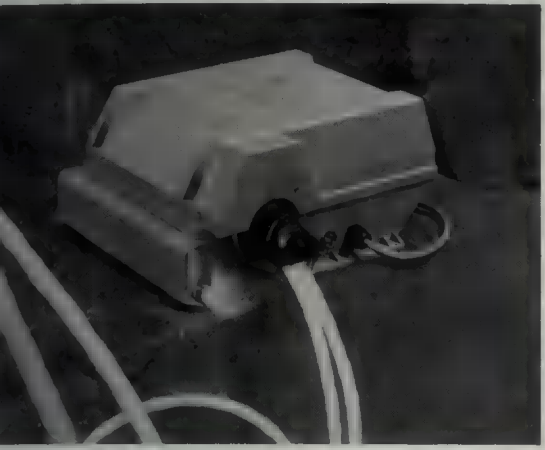
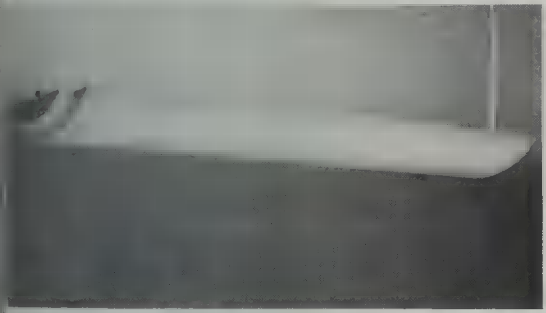


318. New fiber, new optics

A pioneer in architectural applications of iber-optic lighting has developed a high-density, twisted bundling technique for ndividual fiber-optic strands. Called BritePak, it's said to yield double the brightness levels of other tubing. Also shown above is a much-more-powerful fiber-optic illuminator, the 501, which can be wired for line voltages from 100 to 277 volts. Listed for damp-location use, the illuminator takes a proprietary 400W HID lamp from Osram, and a patented integral reflector, to generate light 30 times brighter than the maker's original light source. BritePak fiber-optic cable, illuminated by the 501 fixture, is said to be as bright as neon but use less than half the energy. Fiberstars, Inc., Fremont, Calif.



19. Skinny

Another in a line of linear-indirect luminaires for the VDT-intensive office, The Classica is a small-scale fixture only 3 1/2-in. deep by 3-in. wide, with illuminated perforated sides that make it look even slimmer. Its reflector system is said to produce low ceiling brightness with widespread light distribution. Available in 4- and 8-ft lengths, the fixture takes 2, 3, or 4 T8s , or 2 or 4 40W compact-fluorescent lamps. Litecontrol Corp., Hanson, Mass.

Continued on page 59

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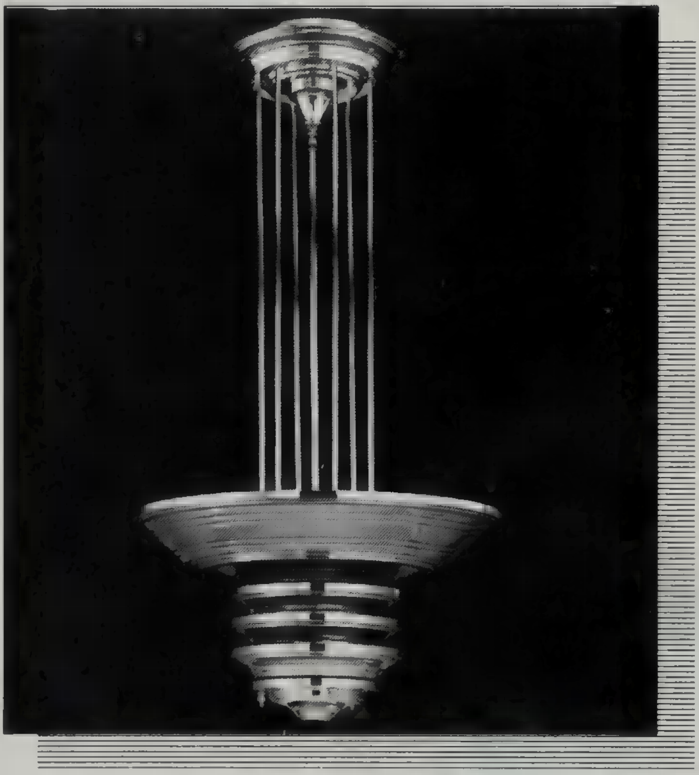

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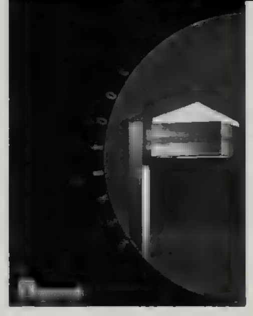
Circle 142 on inquiry card

Product Literature/Lighting



424. Architectural site lighting

A new fixture, the Seabrook pole-mount luminaire, offers design options that coordinate area lighting with a project's overall concept: a solid or translucent pyramidal top; a cast-acrylic band that can glow like neon; and paint-finish and decorative-stripe choices in over 15 colors. LSI Lighting Systems, Cincinnati.

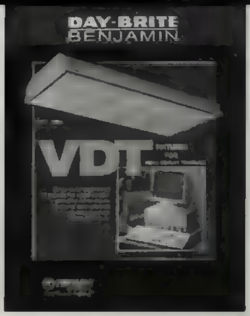
SPERO

425. Industrial high-bay fixtures

Described as traditional, functional lighting for industry, the new Balla Hi Series 4000 is suggested for ceiling heights of from 15 to 90 ft. Spun aluminum and prismatic-glass reflectors are said to provide optimum light distribution from a range of HID sources. Spero Electric Corp., Cleveland.

426. Parabolic task light

Louver control of light from an 18W compact source is said to eliminate direct glare for both user and co-workers. A new mounting option, the Hangtight bracket fits into, or spans between, the slotted channels of wall-panel systems. This frees desk space and puts the swing-arm light exactly where needed. Dazor Manufacturing Corp., St. Louis.



DAY-BRITE
BENJAMIN
VDT

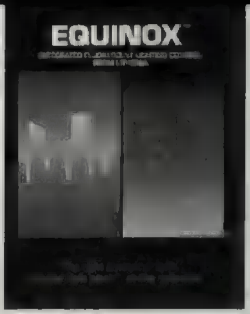
427. VDT illumination

Said to provide the visual comfort required for video-display-terminal environments while maintaining high fixture efficiency, VDT Ultra (large-cell) fixtures meet new I. E. S maximum-brightness standards. A specification folder includes product photos and photometric data, and gives tips on VDT-office lighting. Day-Brite/Benjamin, Tupelo, Miss.

RZB
AMERLUX
LIGHTING SYSTEMS

428. HQI wide-beam floodlight

Low-profile display fixtures, made by RZB in Germany, have been designed to make best use of Osram's HQI-TS metal-halide lamp. Fully adjustable lamp cylinder and ballast housing are separate-but-connected, within one compact, perforated-metal unit. Amerlux, Inc., Fairfield, N. J.



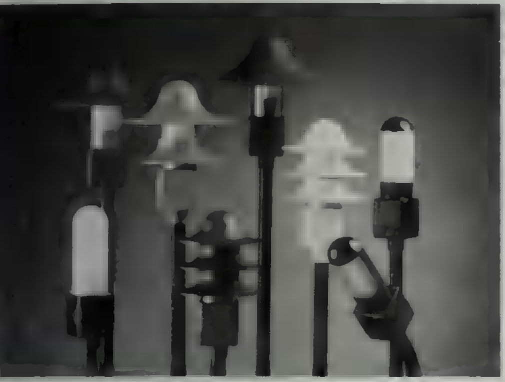
EQUINOX

429. Fluorescent controls

Equinox is a modular, integrated system that controls compatible ele tronic dimming ballasts. Working from user presets for effective lighting levels, it automatically (and smoothly) adjusts dimming in response to photocell direction. Lithonia Control Systems, Decatur, Ga.

For more information, circle number on Reader Service card

ontinued from page 57



20. Fluorescent landscape lighting
capeform fixtures use twin- and quad-tube ompact-fluorescent lamps, with colorful ed, black, two greens, yellow, white) hades in several configurations. Most parts re made of molded polycarbonate described s virtually unbreakable. Line connections re made in the wiring compartment, so ghts don't need a junction box or ground ire. W. F. Harris Lighting, Inc., Monroe, . C.

21. Museum-quality illumination
n Austrian firm famous for crystal has deeloped a display-lighting system, originally r its own traveling collection of antique welry, but equally suited to UV-free illumiation and safekeeping of fragile, light-nsitive objects. The SwaroLite showcase, ermally separated from the light source, as a reflective-glass "ceiling" that bounces ght from fiber-optic elements hidden in its ase. Cool halogen light, introduced invisibly om multiple points, can be aimed to spotght individual elements (and backlight ptions) without glare or shadows. Swarovski & Co., New York City.

ontinued on page 60

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- *Exact incremental hanger locations.*
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Circle 144 on inquiry card

New Products *continued from page 59*

322. Branch-hung downlight
Designed by Hiroshi Kira, a hanging light shaped like a temple bell gives downlighting and area illumination, and is said to be simple to install in trees or from overhangs. Takes MR11s and other low-voltage lamps; comes in black, bronze, and verde powder-coat finishes, as well as custom colors. Lumière Design & Manufacturing, Inc., Westlake Village, Calif.

For more information, circle item numbers on Reader Service Cards.

323. Troffer retrofit
The PowerMax, a three-lamp, one-electromagnetic-ballast fixture, replaces almost any four-lamp, two-ballast troffer in general-purpose commercial, industrial, and institutional settings, fitting within the existing luminaire's footprint. Fixtures are said to offer substantial annual operating- and maintenance-cost savings while meetin current I. E. S. recommendations for 50 to 70 maintained-fc on the work surface. Lithonia Lighting, Conyers, Ga.

324. Interior/exterior collection
Geoform is a new collection of weatherproo wall-mount lighting that offers a wide rang of trim, lamping, diffuser, and size options within a coordinated housing style. The Ge 4 (pictured) has a gently radiused, square-shaped glass diffuser held by aluminum bands. LBL Lighting, Chicago Heights, Ill.

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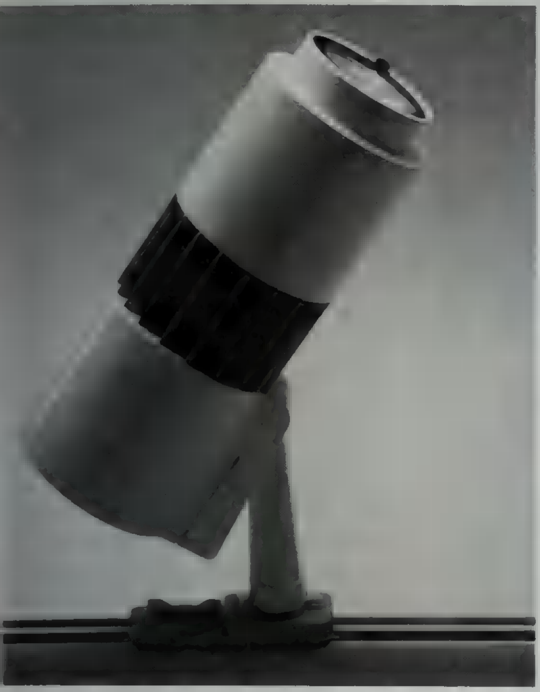
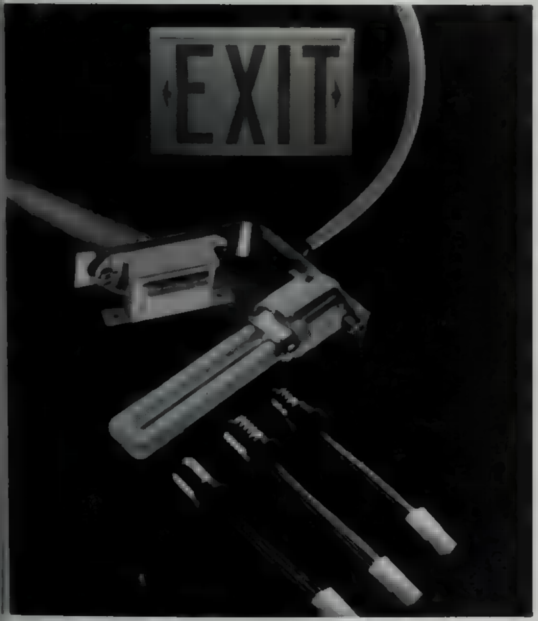
ew Products

ontinued from page 60



25. MR16 spotlights

he Eidos 2100 is said to be particularly effec-
ve in dissipating heat generated by low-
oltage lamps, insuring maximum lamp life
nd cool, quiet operation of the enclosed toroi-
al transformer. For wall-, ceiling-, and track-
ounting, the spotlight comes with a full
nge of accessories such as framing projec-
rs. Reggiani USA, Inc., New Windsor, N. Y.



26. Exit-light retrofit kit

new kit permits the replacement of stan-
rd AC incandescent lamps in existing exits
th compact-fluorescent lamps, without the
st of completely replacing the old exit fix-
res. It includes one 120 VAC ballast/
cket bracket, a 7W twin-tube fluorescent,
d three types of connectors. Retrofit kit
eets UL 924 visibility requirements.
re-Lites, Elk Grove Village, Ill.

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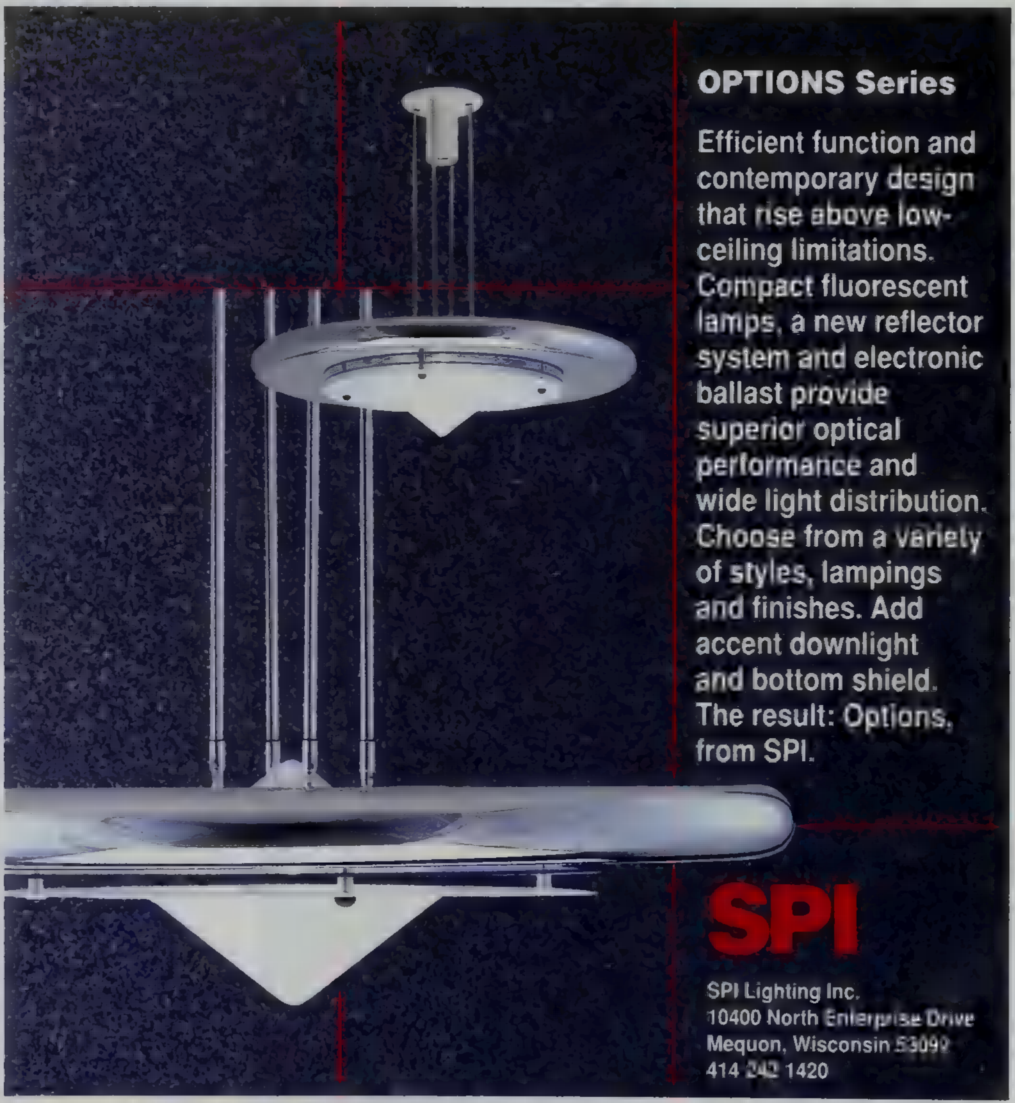
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Efficient function and contemporary design that rise above low-ceiling limitations. Compact fluorescent lamps, a new reflector system and electronic ballast provide superior optical performance and wide light distribution. Choose from a variety of styles, lampings and finishes. Add accent downlight and bottom shield. The result: Options, from SPI.

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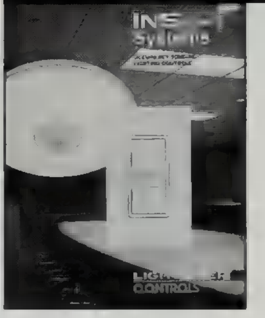
414 242 1420

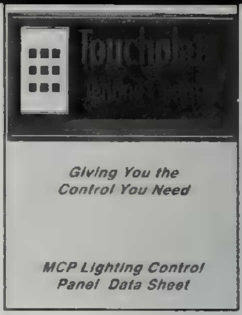
Circle 147 on inquiry card

THE HISTORY OF TRACK LIGHTING
[illegible] lighting has cost time and money.
• [illegible] ladders, gloves and maintenance people.
• [illegible] after-hours adjustment and possible overtime for employees.
• Ladder-related costs include broken merchandise, overturned displays, damaged sprinkler heads.
• Employee-related costs include ladder, fixture and lifting injuries.
• Major difficulties revising displays and redirecting lighting.
That, however, is history...

Product Literature/Lighting



430. Occupancy-sensing controls
A brochure on low-profile InSight devices explains how an integral photocell measures available natural light, restricting electric lighting if there is sufficient ambient illumination. Both ceiling- and wall-mount units permit the user to adjust field-of-view and sensitivity features. Lightolier Controls, Secaucus, N. J.



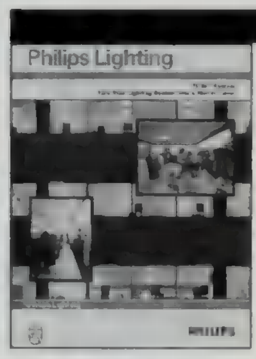
Giving You the Control You Need

MCP Lighting Control Panel Data Sheet

431. Computerized control pan
ControlPlus contractor panels are said to be flexible, programmable, and inexpensive, for use where m ter control of connected loads mu offer both local/manual and centr automated switching functions. O fers priority inputs for occupancy sensors. Touchplate Lighting Controls, Fort Wayne, Ind.

432. Track lighting
A 66-page, full-color track-lighting catalog introduces the Axis retail system, which lets store personnel easily adjust the aim of accent and display-window lighting from the floor, without ladders. Incandescent, fluorescent, and low-voltage fixtures are featured in installation photos. Capri Lighting, Los Angeles.

433. Energy-efficient ballasts
A 58-page catalog presents a complete line of ballasts and related equipment for both fluorescent an HID lamps. A selection guide highlights ballasts that meet all federa energy requirements; certification approvals, and electrical data are given for all products. Valmont Electric, Danville, Ill.



Philips Lighting

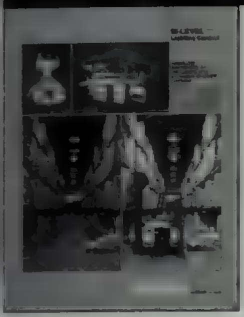
434. Efficacious
Folder on the TL80 System explains how the thin TL 80 linear-fluorescent bulb, combined with electronic ballasts, provides total-system efficacies up to 94 lumens per watt. Case studies demonstrate how the bulb/ballast system improved lighting quantity and quality while reducing the energy load. Philips Lighting Co., Somerset, N. J.

435. Discrete flood
A color catalog introduces the Mic Flood, said to offer startling performance from an ultra-compac (5 1/2-in. long) unobtrusive yet dec rative package. Available in both and 12-volt versions; options includ verde, bronze, or black finishes, fix hood, and barn doors. Kim Lightin City of Industry, Calif.

Continued on page 63

For more information, circle number on Reader Service card

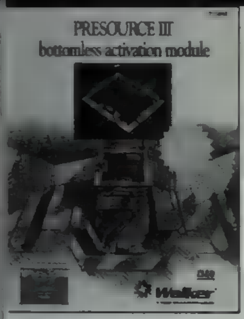
Product Literature/Lighting



436. Energy-saving controls
The Bi-Level high/low HID lighting control now uses fiber-optic technol-ogy, which requires no conduit and carries no voltage or current. The switching system is said to be simple to retrofit into existing distribution and warehouse facilities without re-wiring. Wide-Lite, San Marcos, Tex.

BLACKROCK

437. Historic luminaire
Tech-data folders highlight new outdoor-lighting designs, including the cast-aluminum Blackrock luminaire, developed for the historic waterside district of Bridgeport, Conn. Built to resist vandals and high wind loads, the pole-top light has a distinctive marine flair. TrimbleHouse, Norcross, Ga.



PRESOURCE III
bottomless activation module

Walker

438. Economical distribution
The Presource III bottomless activa-ion module is said to combine the riple-service (voice/data/power) apacity and clean appearance of an n-floor service fitting, with the ase-of-use and lower cost of a poke-hrough device. UL-listed; includes arpet trim ring. Walker, Infloor Distribution, Parkersburg, W. Va.

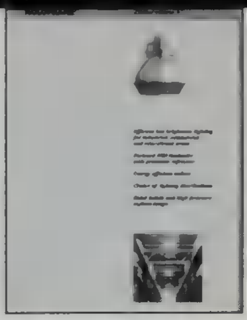
METROLITE

439. Emergency lighting
Battery-operated fixtures have sleek FR-polycarbonate lampheads set on a steel mounting plate. Offered in both battery-pack and remote lamphead configurations, the Metrolite tungsten-halogen fixture line offers a minimum of 90 minutes emergency illumination at 24W load. Yorklite Electronics, Inc., Bensalem, Pa.

RANAX

LUTRON

40. Infrared lighting control
color brochure on the RanaX in-rared wireless remote light dimmer xplains the hand-held transmitter/ allbox receiver system, and sug-ests residential and office pplications where remote operation f lighting offers convenience and afety. Lutron Electronics Co., Inc., oopersburg, Pa.



441. High-bay luminaire
Said to be more than 83 percent efficient (3-percent uplight) Endura-lume V HID fixtures meet lighting requirements in industrial, commercial, and educational applications. A white-finished reflector and prismatic glass or plastic refractor permits wide spacing with uniform illumination. Holophane, Newark, Ohio.

Continued on page 65

or more information, circle number on Reader Service card

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THOMAS

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Manufacturer's Sources

For your convenience in locating fixtures and other products shown in feature articles, RECORD has asked the architects and lighting designers to identify their sources.

Pages 34-37
John L. Tishman Auditorium
New School for Social Research
New York City
Prentice and Chan, Ohlhausen
Restoration Architects
Imero Fiorentino Associates
Lighting Design
Stage and balcony fixtures: Edison Price. Theatrical lighting: Altman Stage Lighting. Control system: Colortran.

Pages 38-39
One Montgomery Street
San Francisco
Luminae Souter, Lighting Design
HID floodlights: Sterner Infranor. HID uplights: Custom, fabricated by Eric Industries. HPS sources: General Electric. Incandescent downlights: Staff. Wall-wash fixtures: Kurt Versen, Inc. Controls: Lutron.

Pages 40-43
Arizona Center
Phoenix, Arizona
ELS/Elbasani & Logan Architects
Fisher Marantz Renfro Stone,
Lighting Design
Palm-tree lighting: Lightolier, Inc.; Lumière. Canopy lights: Kim Lighting. Custom lighting on fabric canopy: Architectural Fabricators. Waterfall lighting: Hydrel. Custom handrail/bollards: Reppel Steel.

Pages 44-45
Resurgens Orthopaedics
Atlanta, Georgia
Farrington Design Group, Architect
Newcomb & Boyd Lighting Design Group
Wall sconces: Artemide (Sintesi). Track downlights: Lightolier. Low-voltage track uplights: Halo.

Pages 46-51
Fifth Floor Adaptive Use/Restoration
New York State Education Building
Albany, New York
Einhorn Yaffee Prescott, Architect
Lam Partners Inc., Lighting Designer
Modified industrial fluorescent uplights: [illegible] Lighting. Fluorescent cove lighting: Litecontrol. Metal-halide uplights: Lam. Sconces: Ruud. Downlights: Kurt Versen. Furniture-integrated lighting: SPI. ■

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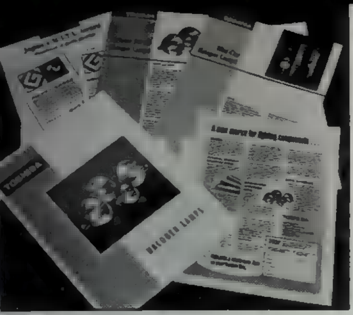
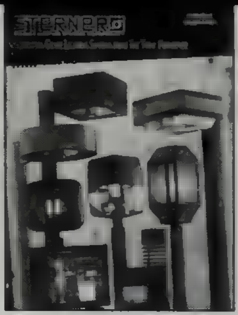
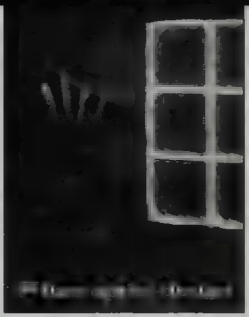


·42. Halogen-lamp guide
specification kit offers details on his maker's halogen lamps, which nclude dichroic-mirror MR16s and IR11s and mini-can JD-E halogens. ata are presented in chart form, sting ordering codes, voltage, rated atts, beam spreads, and rated life. oshiba America Consumer Prod-cts, Inc., Buffalo Grove, Ill.



443. Exterior lighting
A capabilities brochure highlights various outdoor-lighting product lines, including the Softform, elements, and Classics roadway luminaires, Infranor floodlights, and custom pole-top and area lights from Sterner, as well as LightNET control systems. Sterner Lighting Systems, Inc., Winsted, Minn.

44. Halogen downlight
brochure describes the 1-in.-deep uklight as perfect for areas with nited space, such as shelving, wall nits, and display cases. UL listed, e low-voltage light has a twist-on ass lens; offered in matte white d black, satin brass, and satin rome finishes, it may be recessed surface mounted. Lucifer ghting Co., San Antonio, Tex.



445. Fiber-optic display
New FOD 232 fiber-optic cable, with tangle-resistant fibers bound in a block jacket, facilitates some architectural lighting installations, such as inserting light into solid-surface backsplashes and counters, and illuminating glass block. A brochure suggests other retail and residential uses. Fiber Optics Design, Inc., Highland Park, Ill.

16. Switches and receptacles
at, colorful piano-key-like switches any standard outlet box, and inide the wall plate as part of the ted device. Made in Florida, itches are said to be competively iced. U. S. Switch, Inc., Miami.

447. Escape-route markings
Photoluminescent directional markings and signage remain visible in smoke and/or dark conditions, helping emergency building evacuations even when power is cut. Coatings and resin castings need minimal maintenance, only periodic exposure to a sufficient light source. American PermaLight, Inc., Compton, Calif. ■

r more information, circle number on Reader Service card

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Advertising index

For detailed data, prefiled catalogs of the manufacturers listed below are available in your 1993 Sweet's Catalog File as follows:

(G) General Building & Renovation
(E) Engineering & Retrofit
(I) Industrial Construction & Renovation
(L) Homebuilding & Remodeling
(D) Contract Interiors

Bold face—page number
Italics—Reader Service number

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Art Directions, Inc.,**57**; *140*
(314) 863-1895

B
Baldinger Architectural Lighting, Inc., **10**; *104*
(718) 204-5700
BEGA/FS,**2**; *98*
(805) 684-0533
Boyd Lighting Co.,**9**; *103*
(415) 431-4300

C
Capri Lighting, **62,63**; *148,149*
(213) 726-1800
Columbia,**26**; *110*
CSL Lighting Mfg.,Inc.,**24**; *108*, **Cov.IV**; *155*
(805) 257-4155

E
Edison Price, Inc.,**58**; *141*
(212) 838-5212

G
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General Electric - C&I Lamps,**6-7**; *101* [G-E-I]
(800) 523-5520

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Lucifer Lighting Co.,**21**; *106*
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N
Neo-Ray Lighting,**59**; *144*
(718) 445-5492

O
OSRAM,**Cov.II-1**; *157*
(800) 338-2542

P
Philips Lighting,**22-23**; *107* [E]
(800) 631-1259
Poulsen Lighting, Inc.,**5**; *100*
(800) 342-2310
Prescolite,**26**; *110*
Product/Literature Showcase, **27 to 29**

Q
Quality Lighting,**58**; *142*
(800) 375-7632

R
Rambusch,**Cov.III**; *154*
(212) 675-0400
Reggiani USA,**8**; *102*
(914) 565-8500
Rejuvenation Lamp & Fixture Co., **64**; *150* [G]
(503) 231-1900

S
SPI Lighting, Inc.,**61**; *147*
(414) 242-1420
Spring City Electrical Mfg. Co., **67**; *153* [G-E]
(215) 948-4000
[illegible] Sales, Inc.,**31**; *136*
[illegible] 932-0633
[illegible] **56**; [illegible] [G-E]
[illegible]
[illegible] Lighting Systems, Inc.,
[illegible]
[illegible]
Sw[illegible] McGraw-Hill, Inc., **66**; [illegible]

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Roscoe C. Smith III (212) 512-2841

Administrative Assistant
Anne Mullen (212) 512-4686

Director of Business and Production
Joseph R. Wunk (212) 512-2793
Fax: (212) 512-4256

Assistant Promotion Manager
Sheryl Berger (212) 512-2234

Classified Advertising
(801) 972-4400

Editorial
(212) 512-2594

District Offices

Atlanta
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Los Angeles
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1493 Temple Hills Drive
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William Hague (714) 494-8419
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New England/New York
1221 Avenue of the Americas
New York, New York 10020
Louis Kutscher (212) 512-2814
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New York
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Laura Viscusi (212) 512-3603
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San Francisco/Seattle
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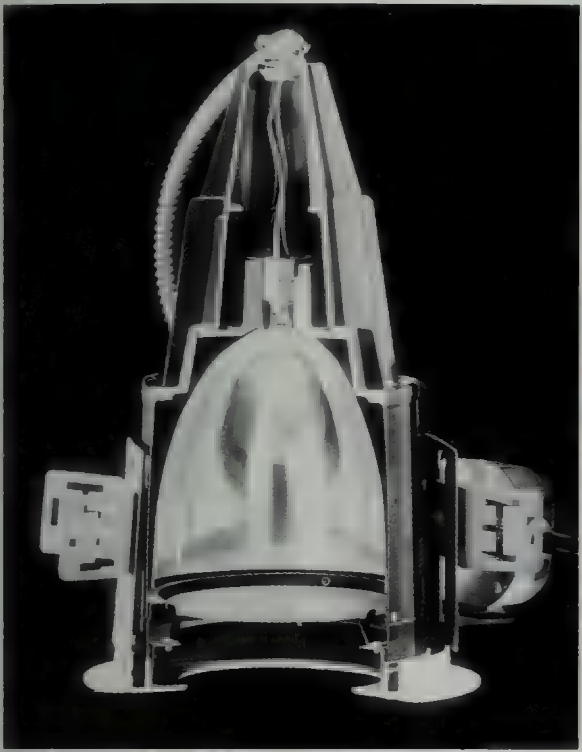

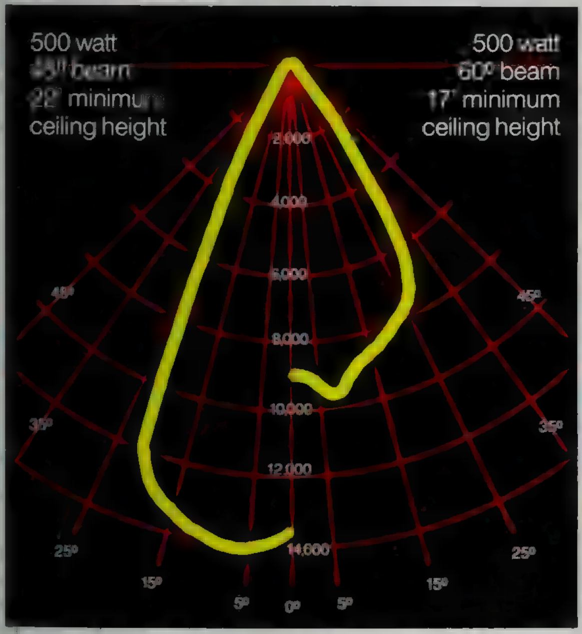

KATHERINE WETZEL PHOTOGRAPHER

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Aquino & Winthrop, Architects. J.C. Buscemi, Liturgical Designer.
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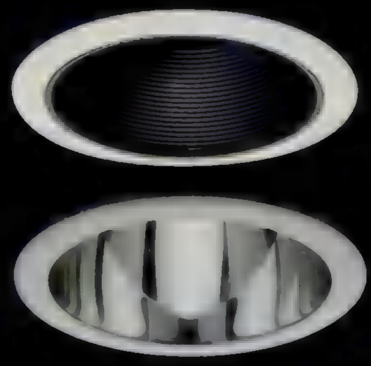
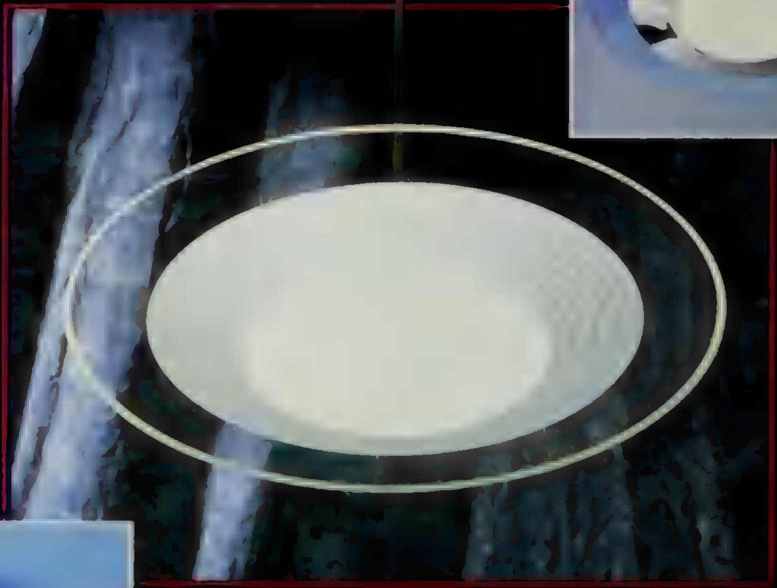


Above: Recessed fixtures utilizing either recessed black baffle, or specular reflector.

Right: Dramatic suspended 2D lighting



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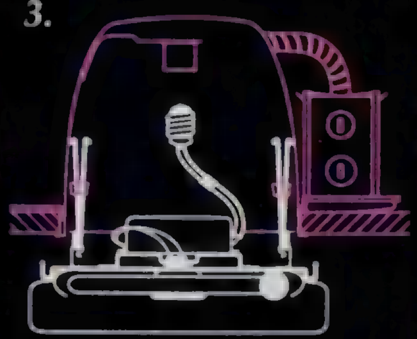

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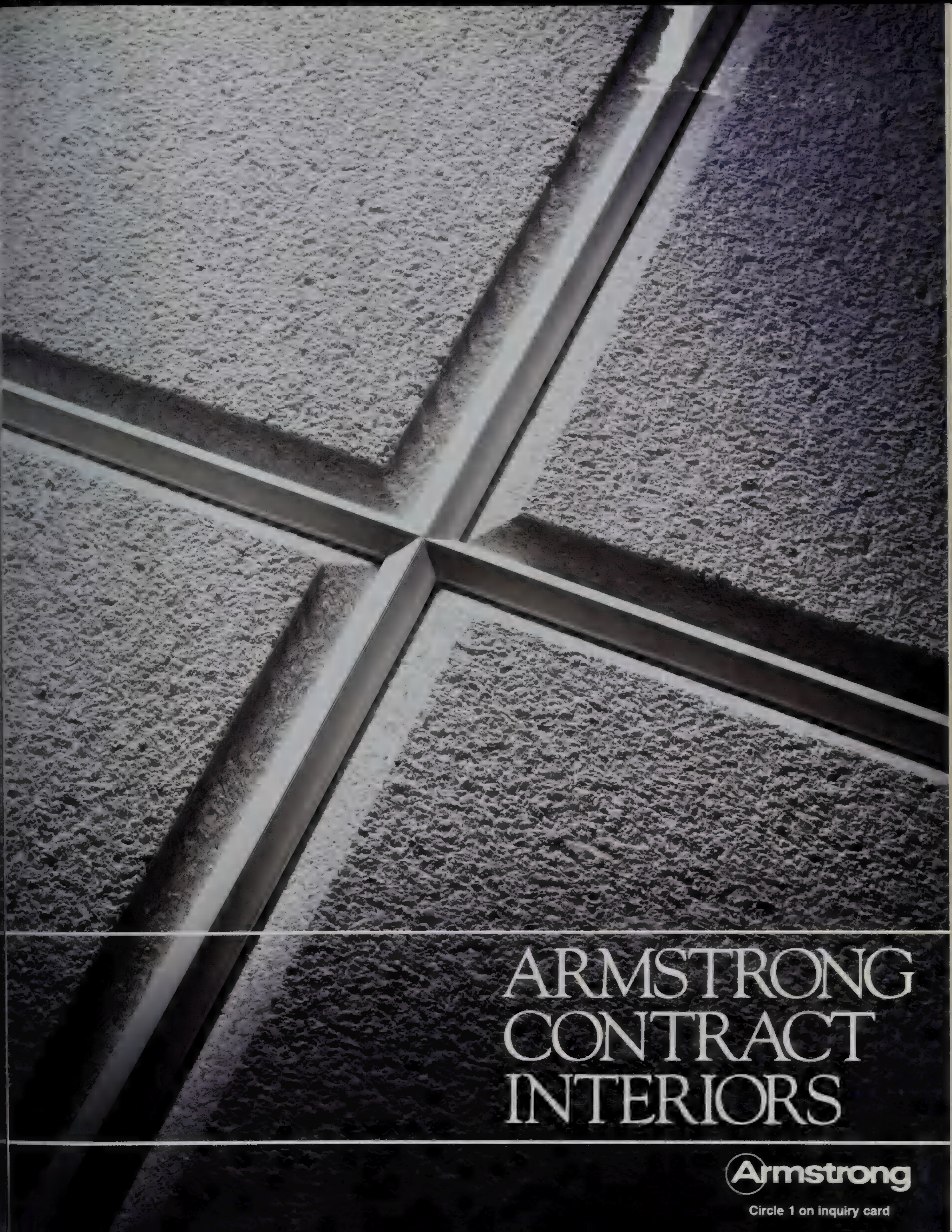

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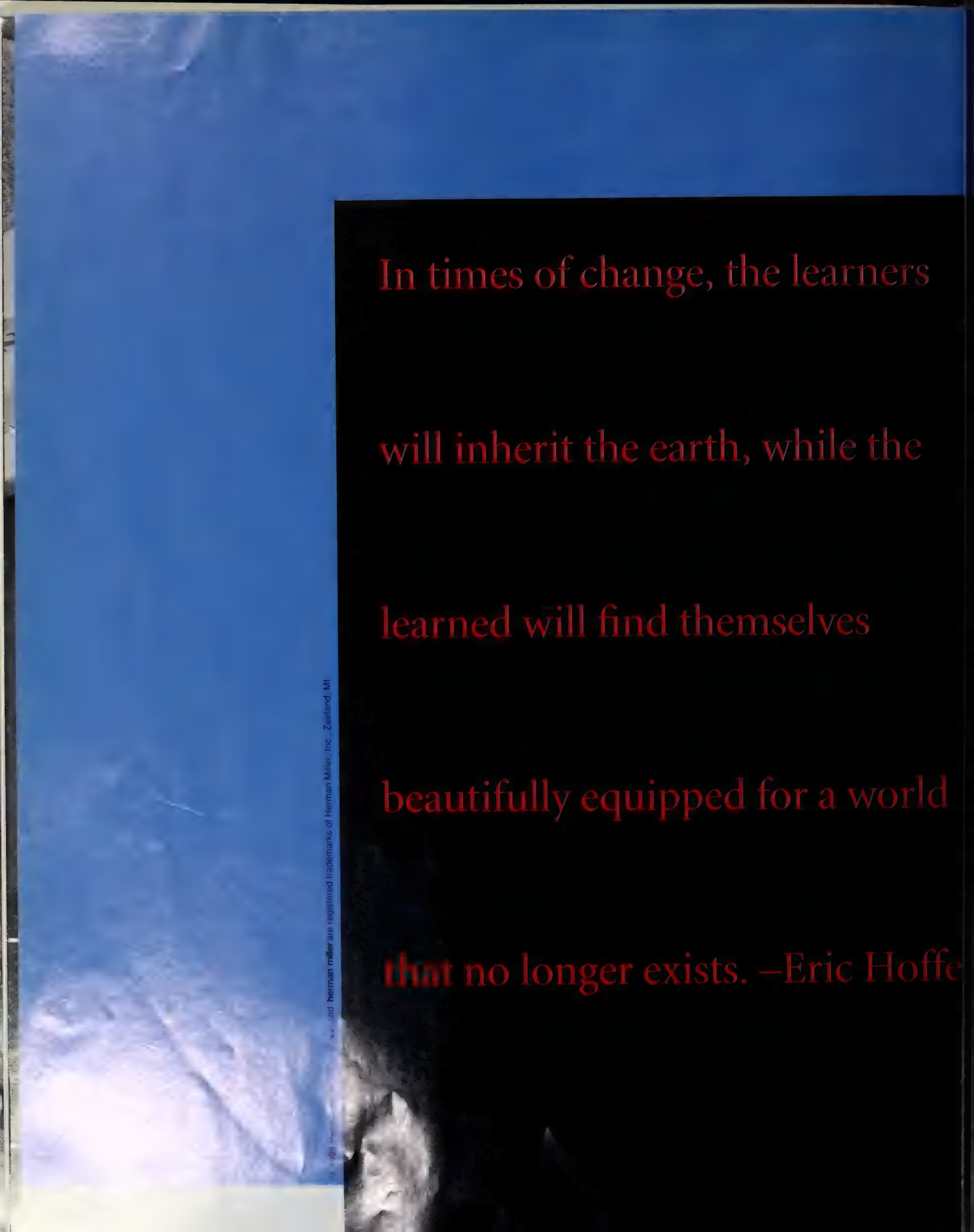

In times of change, the learners will inherit the earth, while the learned will find themselves beautifully equipped for a world that no longer exists. –Eric Hoffe

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Architects have been teaching Herman Miller things for years—things about buildings, about humanity, about work. Often, architects even teach experienced corporations and people something about themselves. As a company, we have tried hard to learn.

What have they taught us? That all work has dignity. That good architecture provides for the physical and emotional needs of people. That well-designed work environments can lift the spirit and palliate the routine. That corporations have responsibilities beyond the bottom line.

Architects who have worked with Herman Miller have left us with lessons we are still learning. We are still working to become better students. Of course architects have also left us with buildings, but the buildings only remind us that bricks and steel are merely a beginning.

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ARCHITECTURAL RECORD

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Letters

Rap New Salk Scheme

In your April 1993 issue [RECORD, page 27], you reported on the continued opposition to the proposed new additions to the Salk Institute. It is unfortunate that the same degree of rigor that Jonas Salk exercised both in his discovery of the polio vaccine and in his collaboration with Louis I. Kahn in the design of the Laboratory Building is noticeably absent in the current design process. This time, priority has been given to skillful but empty public-relations initiatives rather than a truly conscientious search for design excellence.

In and of themselves the proposed buildings are perfectly decent designs. But placed so close to Kahn's eloquent masterpiece, an exquisite dialog between a remarkable building and a glorious site, they become intrusive and mediocre.

Thomas O. Ramsey
Stevens & Wilkinson, Inc.
Atlanta, Georgia

(For an update on the Salk imbroglio, see page 23.)

Architecture Gagged

I appreciated the slight attention given to a recent "incident" (Architecture Gagged, [RECORD, February 1993, page 26]). The school in question is the School of Architecture and Urban Planning, University of Wisconsin-Milwaukee. Note that in most architectural renderings the human figure is placed as context to give a sense of scale to the building. In this project, however, the figures under attack were female and unclothed, [illegible] a few unnoticed un[illegible] figures. The figures [illegible]ented humans, the [illegible] which were women, in [illegible] everyday circumstances [illegible]. Although displaced from their original context the figures were photocopies of existing works of art; i.e.: deAndrea's "Couple" and Rodin's "The Thinker."

The debate raises questions of sexism, social sensitivity, political correctness, and freedom of expression. According to Associate Dean David Kenneth Reed, "the naked body has nothing to do with architectural design." It can, however, be contested that the naked body has everything to do with architecture when it brings into focus the ignorance and social ineptitude of an entire University discipline.

Timothy Robert Gratkowski
Milwaukee, Wisconsin

Copyright Act "Impossible"

The article on the Copyright Protection Act by attorney Carl Sapers [RECORD, March 1993, page 21] points to a serious problem with this law. As a practical matter, compliance is impossible. Discovery of infringement upon a copyrighted design cannot be made with any degree of certainty. Any architect who would sign a warranty clause such as proposed in the article would be foolish indeed. Quite contrary to such a clause, he should include a disclaimer stating no such warranty is given due to the impossibility of discovery.

Reuben M. Welsh, Jr.
Architect
Corpus Christi, Texas

Mr. Sapers replies:

I agree wholeheartedly with Mr. Welsh's view of the new copyright act and would, of course, urge my clients not to sign such a warranty. On the other hand, I cannot imagine a well-advised owner neglecting to seek such a warranty. Only the architect can verify that the design was created by the architect and not copied.

Calendar

Through June 18
"Changing Conditions of Architecture at the End of the Twentieth Century" exhibition; National Building Museum, Washington, D. C. Contact: Uwe Drost, 301/405-6297.

Through June 25
"The Architect and the Photograph" exhibition of the photographic work of Jose Antonio Coderch, Charles Eames, and Giuseppe Pagano. National Institute for Architectural Education, 30 West 22nd St., New York, N. Y. 10010. Call 212/924-7000.

Through Mid-August
Professional Development Architecture Courses, Harvard University Graduate School of Design; fees range from $150 to $1,090. Contact GSD, 617/495-1680; Fax 617/495-5967

June 7-10
A/E/C Systems '93 trade show, Anaheim Convention Center, Anaheim, Calif. Contact Sharon Price, 800/451-1196.

June 12-25; 13-14
San Francisco Institute of Architecture Summer Design Studio at Taliesin West in Scottsdale, Arizona. Tuition $800. June 13-14: SFIA two-day seminar on Frank Lloyd Wright at Taliesin West; Scottsdale, Arizona. Tuition $200. Write: SFIA, Information Office, Box 749, Orinda, Calif. 94563, or call 510/254-9397.

June 13-18
International Design Conference examines "Reconstruction Ahead." Write P. O. Box 664, Aspen, Colo. 81612 or call Lori Schwab, 212/725-2233.

June 14-17
NeoCon 93, Chicago Merchandise Mart. Contact Angela Krzysko, 312/527-7552 or Laura Mercier, 312/527-7555.

June 15-August 20
Design Diaspora: Black Archi-

Continued on page 149

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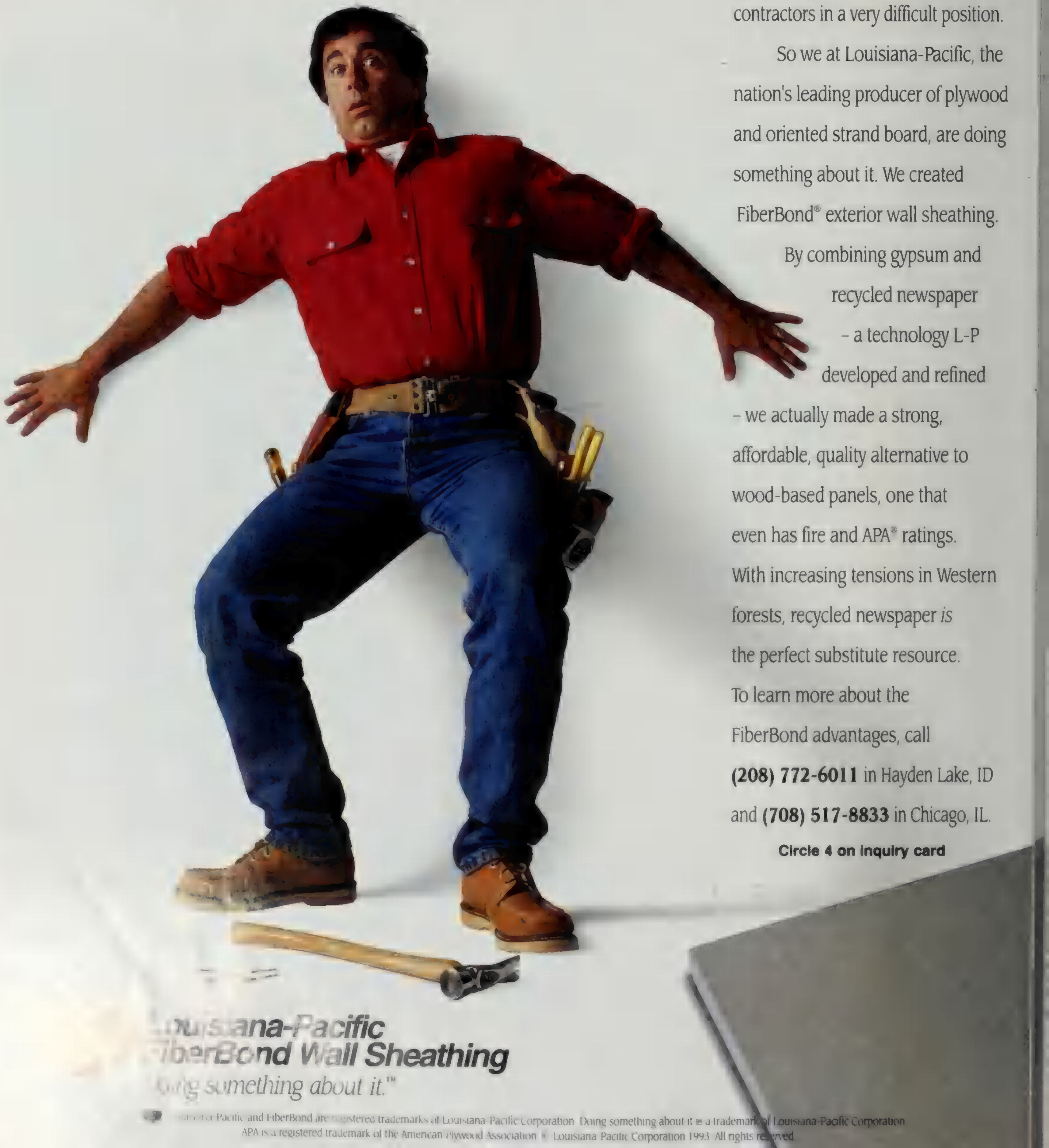

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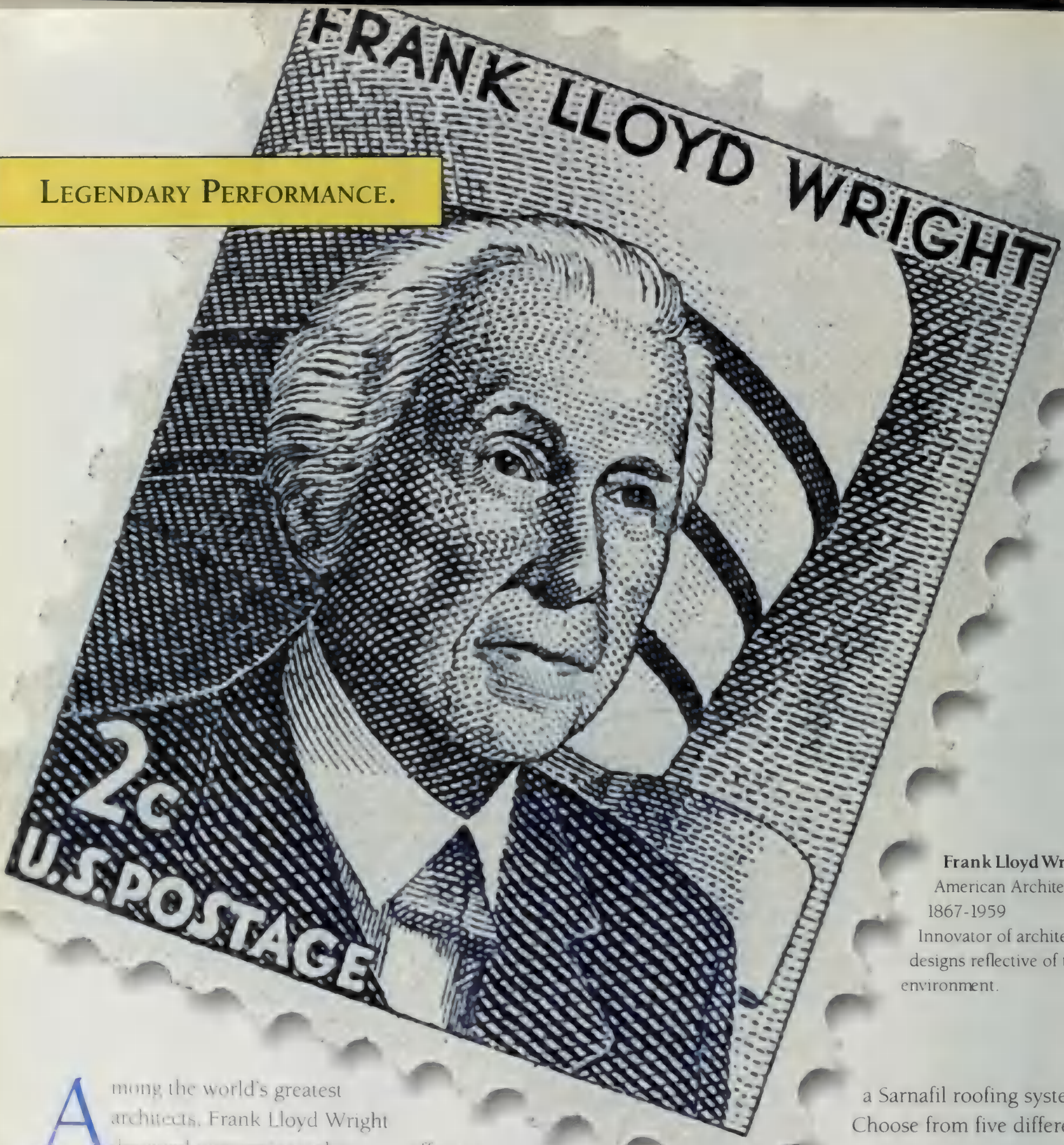

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To Find Work, Create Your Opportunity

A year ago I stood in a conference room listening to a presentation by Tadao Ando. What struck me as much as the quality of his work was his enterprise in identifying projects where no one else had yet seen the potential. He could pass a left-over, seemingly unbuildable lot, for instance, and present an owner with a powerful proposal which often developed into a real project.

After all, training equips the architect better than anyone to spot such opportunities, but there has always been a reluctance to create projects because it smacks of ambulance chasing.

Nothing could be more off-base. Take infrastructure, theme of this month's Building Types Study. Who would have thought that so many different types of projects, from telecommunications centers to parking garages to steam plants to subway systems, were able to benefit from the humanizing ministrations of an architect or landscape architect? As this issue's lead essay, entitled "Uncivil Engineering," points out, the climate is ripe for architects to look for such opportunities.

The funding will materialize, despite April's defeat in the U. S. Senate, after a successful filibuster, of a Clinton Administration bill that would have poured $19.5 billion into the economy. Of this amount, some $8 billion would have gone into infrastructure projects, including community development block grants and just under $1 billion for waste-water-treatment plants.

In any case, the Intermodal Surface Transportation Efficiency Act, or ISTEA, passed in 1991, is pumping $3.9 billion this year into construction-related development, about two-thirds for highway construction, the balance for mass transit. (States then match federal funds on a 20 to 80 basis.) Not only that, but ISTEA also encourages enhancements around the facilities—landscaped "lids" over freeways that bissect residential neighborhoods, for example—spawning opportunities for architects with the vision to "see" such projects.

What's more, on federal work, which must be announced in the *Commerce Business Daily*, the designer or other prospective vendor of a service or product is by long tradition assumed to have an edge by virtue of having helped shape the Request For Proposals on which qualifications are judged.

Creative openings exist also in other fields for astute and ambitious architects. For example, the redevelopment of large chunks of well-placed but derelict land in the nation's old industrial towns and cities is a need and an opportunity, as noted in the Somerville, Massachusetts, project described in this month's article on sustainable development (page 32). There are opportunities in adaptive reuse of historic structures, and in consolidating, expanding, or recycling school or manufacturing facilities. Growth of the "green" movement, into which the Administration is expected to put new teeth if it can work out the short-range conflict with jobs, is a source of architectural services, not only as "green" building projects, but also in consulting services, a direction I have championed in the past as a crucial ingredient in raising the architect's public stature. Green services could include such areas as lead-abatement consulting and "green" audit services.

The range is huge. Where architects tap into it, and how, is limited only by their imagination, enterprise, and perseverance. *Stephen A. Kliment*

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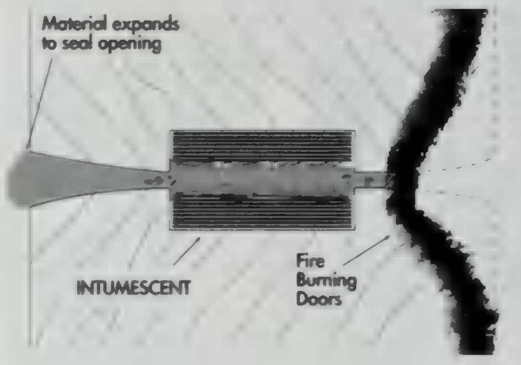

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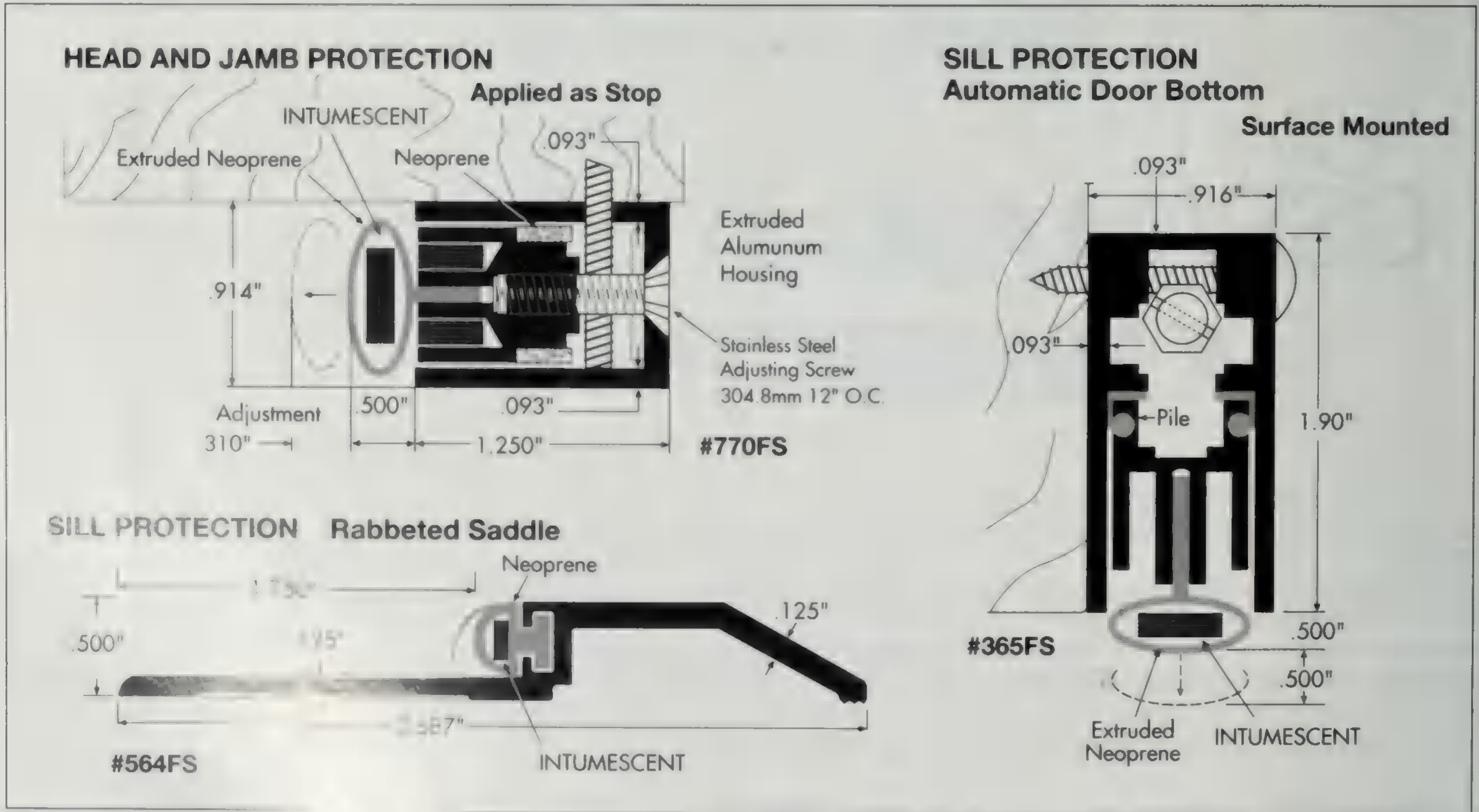

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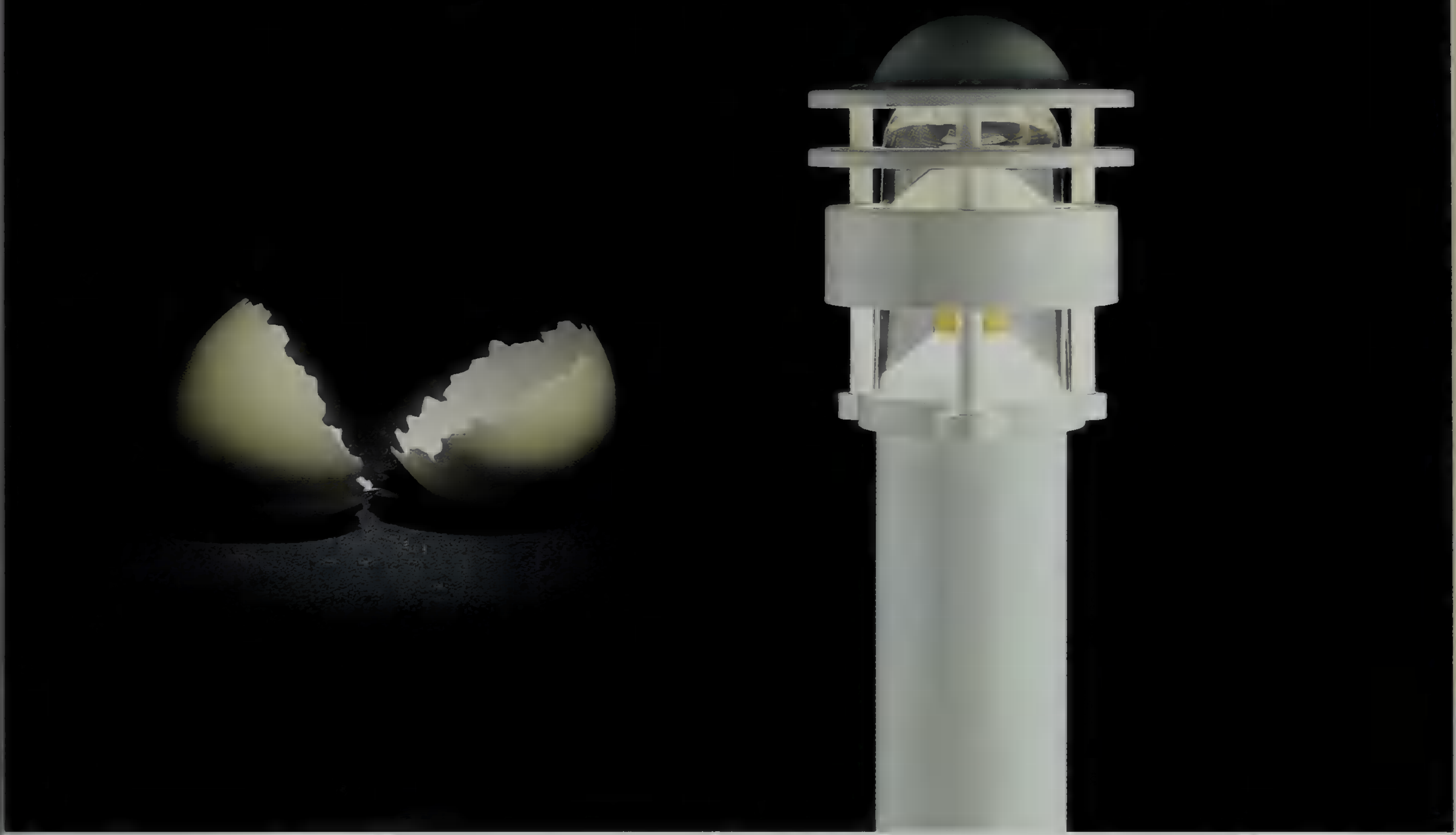

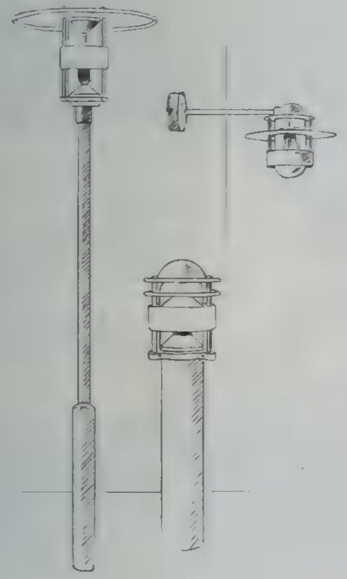

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SUPPORT CA

d jogs. Brown & Root employee center, Houston.

E BEAUTIFUL.

It's not surprising that Brown & Root's employees think the exposed joists in their fitness center are an
tractive part of the building's design. But it's a bit unusual when the accountants often comment that those
eel joists are absolutely gorgeous. That's because those Vulcraft arched chord joists cost them half as much
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all sizes and styles, too. See Sweet's 05100/VUL or contact any of the plants below.

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Box 637, Brigham City, UT 84302 801/734-9433: PO Box 100520, Florence, SC 29501 803/662-0381; PO Box 169, Fort Payne, AL 35967 205/845-2460; PO Box 186, Grapeland, TX 75844 /687-4665; PO Box 59, Norfolk, NE 68702-0059 402/644-8500; PO Box 1000, St. Joe, IN 46785 219/337-5411. General Contractor: Brown & Root; Steel Fabricator: Palmer Steel Supplies, Inc.

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SAFTI BULLETIN

SAFETY AND FIRE TECHNOLOGY INFORMATION FROM O'KEEFFE'S INC.

ONE-HOUR FIRE RATED "WINDOWS" AND VISION AREAS

Much confusion and misinformation exists in the market place with regard to "one-hour fire rated" glazing and vision areas. The following are contributing factors:

1. Manufacturers have tested products in excess of maximum recognized 45-minute test duration and size limitations.
2. Testing laboratories have modified test procedures and extended "conditional" labeling services for products outside the parameters of the Model Building Codes.
3. Designers often desire to furnish vision areas in fire resistive walls that require ratings greater than 45-minutes.

Is there such a thing as a "One-Hour" fire window?

There are no current recognized classifications, test standards or code requirements for one-hour fire windows. The Model Building Codes limit the rating of window assemblies to 45-minutes. Under the Uniform Building Code (UBC) to be used in a one-hour wall, such as an occupancy or area separation wall, the window assembly must be tested to wall standards. The International Conference of Building Officials (ICBO) issued a code interpretation which clearly addresses this: *"UBC 43-4 limits the rating of window assemblies to 45-minutes… For a window to be rated as a separate one-hour fire resistive assembly it would have to be tested as a wall assembly in accordance with UBC 43-1, which would include the requirements of heat transmission"*. CONTRAFLAM™ is the only glazing product certified with Underwriters Laboratories (UL) and Warnock Hersey International (WHI) as meeting the stringent requirements of wall standards.

continued on page 4...

A one-hour fire rated enclosed atrium designed with GPX framing and glazed with CONTRAFLAM Camel Point, Phoenix, Arizona

* * *

Welcome to the SAFTI Bulletin

Clear glazing products having both fire and safety ratings now offer unlimited design freedom. These products combine necessary safety and fire protection with outstanding advantages. Full glass panels in doors, windows and walls, can now be incorporated to create open, expansive, clear vision areas where fire protection is required.

There are substantial differences among the various fire rated glazing products available. Fire ratings, safety ratings, protection against radiant heat, maximum sizes, framing requirements, optical clarity are all varying factors. Therefore, it is important to be aware and informed of the offerings and limitations of these various products.

The intent of the SAFTI Bulletin is to bring new products, current industry concerns, and design opportunities to your attention so you can make informed decisions when selecting fire rated materials. We welcome your comments and are happy to answer any questions you may have regarding fire and life safety.

SAFETY AND LIABILITY ISSUES TO CONSIDER WHEN SELECTING FIRE RATED GLAZING

Safety Glazing Requirements

The Model Building Codes require glazing in hazardous locations to be safety rated. Virtually all fire door vision areas and adjacent sidelites qualify as a "hazardous location". To be safety rated, all glazing must meet Consumer Product Safety Commission(CPSC) "human impact" load requirements with one exception. Wired glass used in

continued on page 2...

(ADVERTISEMENT)

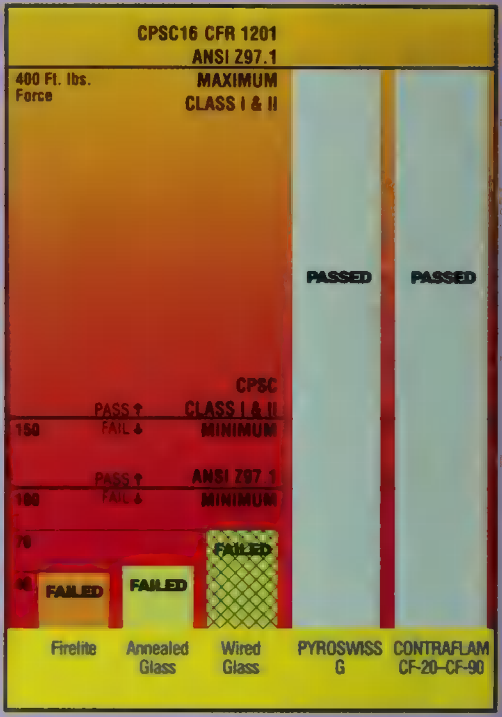
SAFETY AND LIABILITY ISSUES TO CONSIDER WHEN SELECTING FIRE RATED GLAZING

continued from page 1...

a fire rated door is subject to the lower American National Standards Institute (ANSI) standard. ANSI requires a minimum 100 ft. lbs. impact force resistance, compared to the CPSC minimum of 150 ft. lbs. for lites up to 9 sq. ft. (up to 400 ft. lbs. for larger lites).

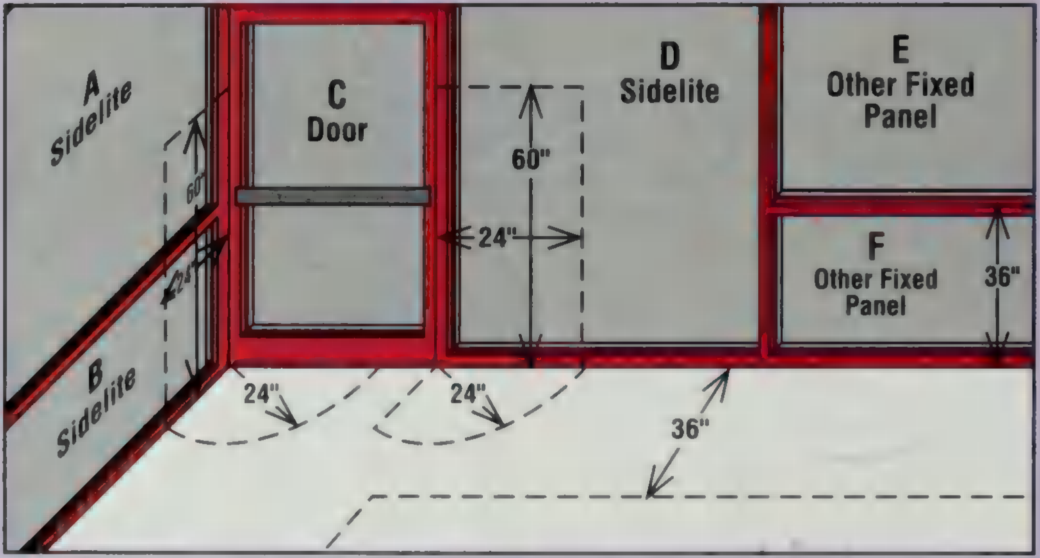
Fire Rated Assemblies Are Not Exempt

Fire code requirements do not "override" safety glazing standards. Fire protection rated glazing materials are required to be safety glazing when installed in hazardous locations. Refer to: UBC section 5406, Building Officials and Code Administrators International (BOCA) section 2203, Southern Building Code Congress International (SBCCI) chapter 2703.1 and National Fire Protection Association (NFPA) 80 chapter 1-7.1. These all address safety glazing standards for glazing materials used in fire rated assemblies.



Safety Impact Force Chart

Based on independent laboratory testing. Contact manufacturer for full test results.



To receive a video documenting the impact force testing of available fire rated glazing products please indicate reader service number 96 or contact O'Keeffe's.

Locations Requiring Safety Glazing

C is a door and must be safety glazed.

***A, B, & D** must be safety glazed as they meet the two conditions for sidelites:*

1. *fall within a 24" arc of the door*
2. *are within 60" of the floor*

***E & F** are considered "other fixed panels" and require safety glazing when all of these four conditions are met:*

1. *exposed area is greater than 9 sq. ft.*
2. *bottom edge is within 18" of the floor*
3. *top edge greater than 36" above the floor*
4. *walking surface(s) located within 36" of the glazing plane*

Exception for fixed panels E & F:

In lieu of safety glazing, a horizontal member 1-1/2" in height may be located [illegible] 34" and 38" of and adjacent [illegible] walkway surface. The [illegible] withstand a [illegible] 50 lbs without [illegible] glass

Even Wired Glass Must Meet Safety Standards

The model code safety standards are based on ANSI Z97.1 and CPSC 16 CFR Part 1201. While exempt from the higher CPSC standard (if used in a fire door only), each of the model codes require wired glass to meet the ANSI standard. CONTRAFLAM and PYROSWISS™ glazing materials conform to these standards. However, independent testing shows that certain ceramic glazings and wired glass do not!

Fire and Safety rated door assembly glazed with PYROSWISS.

Ceramic Glass is Not Safety Glazing

Tests show impact force as low as 40 ft. lbs. shatters certain ceramic glazings in dangerous breakage patterns! The Flat Glass Marketing Association and the National Glass Association have advised their members not to use FireLite™ in fire doors or other hazardous locations without a variance. Because FireLite is a ceramic, it does not meet the technical CPSC definition of glass. While excused by a technicality from federal enforcement under CPSC 16 CFR part 1201, ceramics are not exempt from model and local building codes which require it to meet the CPSC standards incorporated into the codes. All three model codes are on record requiring FireLite to meet their CPSC-based safety standards. For more information please use reader service number 97. ★

GPX APPLICATION

The Mall of America, which recently celebrated its grand opening in Bloomington Minnesota, is the largest shopping mall in the US. GPX fire rated doors glazed with one-hour CONTRAFLAM were selected for the entrances of the public mass transit lobby. This project required eight pairs of one-hour fire rated doors and sidelites. The GPX system not only serves as a fire barrier, but also reduces noise from buses and cars unloading and picking up passengers at the mall. ★

A LACERATING LOOP HOLE

The Consumer Product Safety Commission (CPSC) has docketed for review a petition requesting amendments to the CPSC safety glazing rules.

O'Keeffe's petitioned the CPSC to remove a 1984 CPSC provision exempting wired glass in fire doors from its standards. This rule resulted in the virtually unrestricted use of wired glass in fire doors in the US. In 1977, the regulations were originally drafted to exempt wired glass from the federal standard for only two and a half years, until manufacturers developed a safer glass product for use in fire rated locations. The CPSC was forced to revise the original rule in 1984 to extend the exception to fire doors indefinitely following a court challenge brought by wired glass interests.

The petition contends that the 1984 revision should be overturned for three reasons:

1. Today there are a number of products on the market that provide both fire and human impact safety.
2. Wired glass distributed in the US does not meet even minimum safety standards required by the three model building codes.
3. The number of injuries resulting from wired glass continue to rise.

The same petition, also requested the definition of glazing be expanded to cover all glazing materials, including ceramic glazing. The petition contends that all products used in the glazing of doors and sidelites should be safety rated and regulated by the CPSC.

Independent impact testing of wired glass indicates breakage occurs between 40-70 ft. lbs. of force.

Because of concerns with the safety characteristics of both wired glass and FireLite Warnock Hersey International was commissioned to administer independent tests. The results of the tests determined that both products fall substantially below the specific test standards defined by the CPSC and ANSI.

According to William O'Keeffe, president of O'Keeffe's, *"It is important that we assure that the products we import into the US don't maim our kids for life. There are plenty of safe products available that can provide both fire safety and human impact safety."* ★

PYROSWISS RECEIVES IMPACT SAFETY CERTIFICATION FROM THE SGCC

The Safety Glazing Certification Council (SGCC) announced that it has certified PYROSWISS as an approved Category II safety rated product. PYROSWISS is distributed by O'Keeffe's in the US.

PYROSWISS, a highly tempered glazing product, can withstand impact loads of up to 400 ft. lbs, or 10 times that of wired glass.

Undergoing rigorous fire testing by Warnock Hersey International and Underwriters Laboratories PYROSWISS today carries the largest listed lite sizes on the market in both windows and doors for its fire rating.

PYROSWISS was first introduced to the US in January of 1992 and is being used in place of wired glass and ceramic products for both its impact strength and superior clarity.

Finding its place in numerous commercial, industrial and institutional applications from Hawaii to New York, PYROSWISS is the clear choice of architects and designers because of its safety and aesthetics qualities. For more information use reader service number 98.★

(ADVERTISEMENT)

ONE-HOUR FIRE RATED "WINDOWS" AND VISION AREAS

...continued from page 1.

How does the testing method for walls differ from windows?

The test method for walls differs from the test standard for windows in that it addresses the hazards of radiant heat transfer and limits the maximum temperature rise of the assembly on the non-fire side to no more than 250° Fahrenheit.

Why is "Heat Transmission" a concern for glazed assemblies?

Heat which passes through fire rated glazing, or any material, may ignite combustible materials on the non-fire side, often at great distances from the fire source. Heat transmission can also seriously impede the safe escape of occupants and hamper firefighters.

If glazing materials do not fully satisfy the requirements of radiant heat transmission how can they be "labeled" for periods greater than 45-minutes?

Although building codes limit window ratings to 45-minutes, testing laboratories have not followed express test standards, but have extended the test duration and have issued non-standard "conditional" listings requiring special approval of the Authority Having Jurisdiction. These "conditional" listings are an unprecedented departure from prior listing policies, and are currently being challenged because they do not represent products tested in accordance to model building code requirements.

A one-hour wall test conducted at Warnock Hersey International testing laboratories.

CONTRAFLAM, constructed of two or more lites of tempered glass separated by a gel-filled cavity, prevents the passage of radiant heat.

Are there glazing products that satisfy the requirements for one-hour ratings?

Yes, glazing products such as CONTRAFLAM installed in a GLASSPROTEX (GPX) framing system have passed the model building code requirements for one-hour construction. In a GPX framing system, entire multiple lite walls glazed with CONTRAFLAM are acceptable, providing exceptional design versatility. CONTRAFLAM is fully tempered and makes full glass fire rated doors possible. CONTRAFLAM is available in make-ups with ratings from 20-120 minutes for a variety of applications.

In Summary . . .

Today's glazing products require careful evaluation by industry professionals concerned with product specification, inspection, loss control and liability interests of building design. The total fire and life safety effectiveness of a glazing product within an intended application should be considered.

Properly used, "New Technology" glazing products represent an improvement in the industry regarding fire, safety and aesthetic performance. However, if misunderstood or misused, the fire and life safety performance may be dangerously compromised. For more information use reader service number 95. ★

LISTED AND LABELED

Warnock Hersey LISTED

Underwriters Laboratories Inc.

CONTRAFLAM 20, 45, 60 and 90 minute fire rated glass

pyroswiss 6, 8, 10, 12, 15 and 19 mm 20/30 minute fire rated glass

GPX [illegible] minute door lite kit
[illegible] minute door/window system
[illegible] minute door/window system
[illegible] window framing system

NEW PRODUCT ANNOUNCEMENTS

CONTRACRIME

CONTRACRIME, consisting of a polycarbonate interlayer between a lite of tempered glass and CONTRAFLAM, combines fire protection with attack resistance. It offers an attack resistant rating of 17.55 minutes and is fire rated for 45-minutes. (reader service number 99)

New Make-Ups of PYROSWISS

PYROSWISS is now available in thicknesses of 6, 8, 10, 12, 15, and 19 mm. These various make-ups allow for increased impact protection and enhanced sound attenuation qualities. All are labeled by UL and WHI for 20-minute fire rated protection.

PYROSWISS has achieved international acceptance for use in maritime applications. Typical projects range from ship building to ship repair and also include offshore applications such as fixed oil platforms. PYROSWISS meets International Maritime IMO and SOLAS requirements for fire protection. (reader service number 100)

GPX GLASSPROTEX is a registered trademark of O'Keeffe's Inc.

CONTRAFLAM is a registered trademark of Saint-Gobain

PYROSWISS is a registered trademark of Vetrotech Ltd.

FireLite is a registered trademark of Nippon Electric Glass Company, Ltd.

O'Keeffe's Inc.

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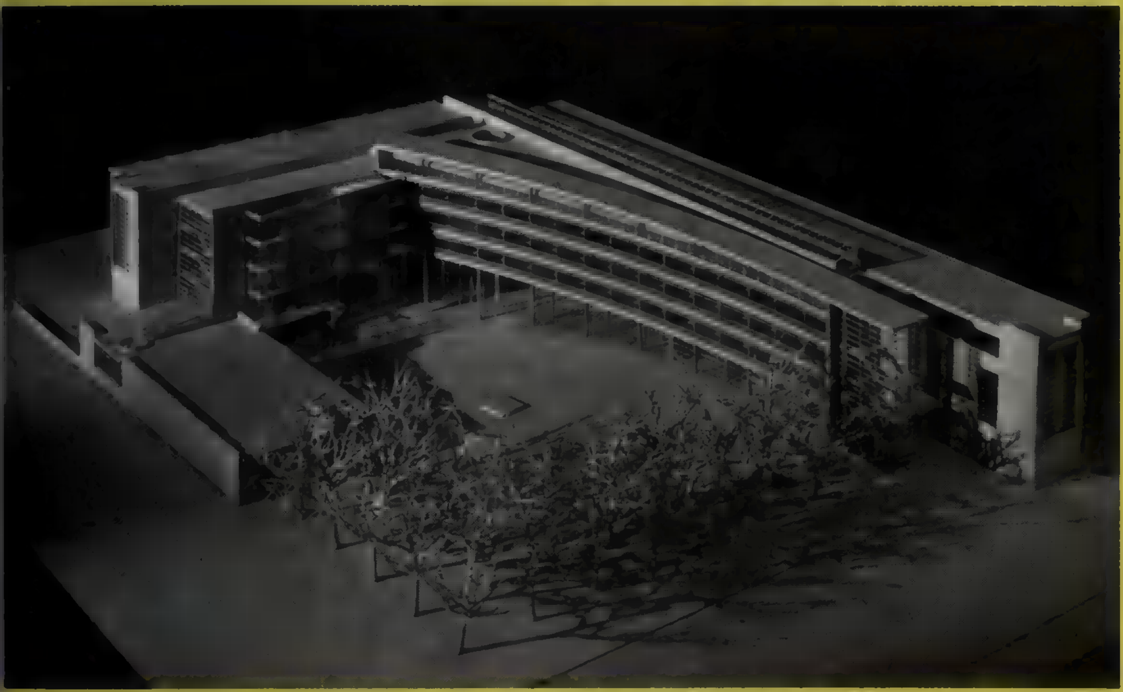
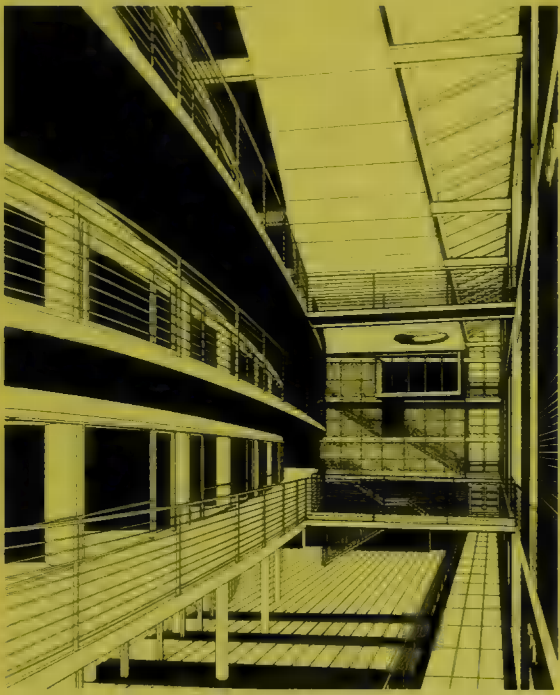
llinois

lew Architecture School Will Sit at ampus Crossroads





esigned by Perkins & Will, Temple Buell all will help stitch together old and new at e Champaign-Urbana campus of the Uni- rsity of Illinois when it opens in late 1994. t at the intersection of two major campus es, the 77,000-square-foot complex, which will house the School of Architecture and Departments of Landscape Architecture and Urban and Regional Planning, will present a masonry face to older Georgian buildings and a curving glass wall to the newer parts of campus, says Ralph Johnson, the partner-in-charge. The masonry portion will contain studio lofts, while the glass structure will house offices. Equally important will be the spaces defined by these areas—an irregular indoor space usable for exhibits and gatherings and an outdoor garden. *C. A. P.*

nternational

wenty Finalists Vie for Palladio Prize

e winner of the Andrea Palladio interna- nal prize for architecture will be chosen in e August from 20 finalists, including Marc rani (1, cemetery, Nice, France); Dick uijne (2, weekend "tree" house, Almere, lland); Gerald Sanderson (3, Windsor use office building, Plymouth, England); ric Batlle and Joan Roig (4, restoration/ex- nsion of Fontes Palace, Murcia, Spain); scar Cadena (5, house, San Luis Potos, Mex-); Shuhei Endo (6, Toseki tile firing plant, aicho, Japan); Richard Stacy (house, ECORD, April 1992, page 124]). ■

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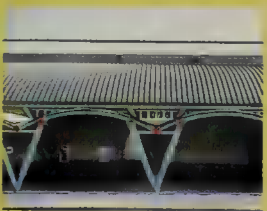

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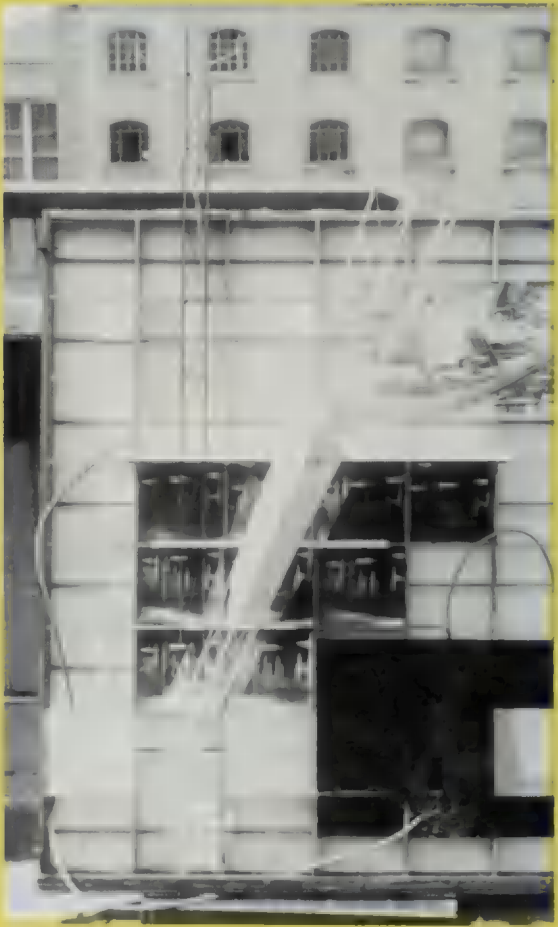
France

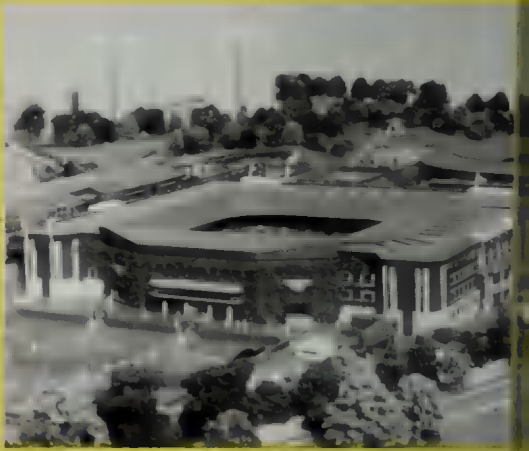
Marseilles Cheers Houston Students' Plan For Historic Tobacco Factory



Rough, tough, and worldly-wise Marseilles opted for architecture when a studio that had created a reuse plan for an abandoned Gauloise factory complex became one of the performances at an on-site dance and theater festival. The crowd-pleaser was a plan, by five students and a professor from the University of Houston's French program at Saintes, to use the four-block complex to create a new "port"—one trafficking in culture and communications data—to replace the declining shipping and petrochemical fortunes of Marseilles. The 19th-century landmark, which began in 1934 to expand to offer such services as dining rooms, a school, and a hospital to its 5,000 workers, would house business suites and seminar facilities, a hotel and convention center, apartments, and a cultural and theater complex. Interventions include the reopening of hidden windows and the creation of new ones, the insertion of "light spikes" (left) to pierce the dark interiors with daylight and allow festive interior light to glow in the nighttime sky, a medley of gardens, and the conversion of the house once used by the company director into an architectural research center. ■

England

Love in the Garden



Lest success spoil the All-England Lawn nis & Croquet Club at Wimbledon, Londo Building Design Partnership has devised 20-year masterplan to reinforce its Englis garden aura, while providing 25 percent n seats, and enhanced player, media, and ca ing facilities using bridges and tunnels to bypass spectator areas. Concern for the neighbors prompted the rerouting of que an improved perimeter appearance, and p manent new buildings that lessen the nee erect and strike temporary structures for championship tournaments. ■

Pennsylvania

On-Site Workshop Yields Museum Design

The new Palmer Museum of Art at Pennsylvania State University, scheduled to open in August, was designed by Arbonies King Vlock in [illegible] with Moore Andersson and an [illegible] —ranging [illegible] facilities [illegible] ture [illegible] who par[illegible] sign workshop. "I[illegible] with this many [illegible] a time frame [illegible] light years," says museum director [illegible] Jones Arbitman. "I quickly came to the [illegible] that the workshop process is an [illegible] solution to dealing with a campus building which has to withstand criticism by [illegible]." On the downside, Arbitman [illegible]. "These workshops require [illegible]." ■

New York City

Architects of Color Seek Urban Role

The audience at "Redefining and Renewi the American City: The Role of Architect Color" bristled when Emanuel Kelly suggested architects of color work *pro bono* establish credibility; they held the public tor responsible for the lack of physical progress in the inner city. The Kelly/ Ma partnership, for 25 years a champion of c munity-preserving low/moderate-income housing, also urged political savvy on th who want to be effective in the inner city Stull and Lee partner M. David Lee stres physically and economically linking inner ies to central business districts. He urge audience to influence policy by working i public agencies, or to build practices that urban designers and community leaders aggressively pursuing needed projects. RECORD editor Stephen Kliment modera the Cooper-Hewitt event. ■

esign

Briefs

one!
tealthily one Saturday morning in May, rews moved in with bulldozers to the Salk nstitute and razed Louis Kahn's eucalyptus rove. The trees, which formed the entrance oyer to Kahn's monumental court, eventu-lly will be replaced by adult trees, claims a alk spokesperson. Intense pressure had een brought by the architectural commu-ity to block construction of an addition that equired removal of the grove [RECORD, pril 1993, page 27]. *Aaron Betsky*

Vinners
'he grand winner of an electric-vehicle in-rastructure competition is Lucy Pedler of 'rellwitz/Chilinski Architects, Cambridge, lass., along with mechanical engineer Bob atson, and planner Peter Smith, who cre-ted a linked framework of policies and echnologies within a cityscape. The scheme ncludes drive-up recharge units, bollard nits on residential streets, and solar collec-ors designed into garages and highway-nedian landscapes.

The American Academy in Rome has warded its 1993 fellowships in architecture, esign arts, and landscape architecture to largaret Holben Ellis, Gary R. Hilder-rand, Sanda D. Iliescu, Bettina A. Raphael, nd Kevin Walz.

Hugh Hardy has been elected to the Ameri-an Academy of Arts & Letters.

Andres Duany/Elizabeth Plater-Zyberk von the Thomas Jefferson Medal.

Thomas Jefferson has won an AIA Gold ledal (posthumously, of course).

ompetitions
June 18 is the Precast/Prestressed Concrete ntry deadline. Contact PCI, 175 W. Jackson lvd., Chicago, Ill. 60604, Fax: 312/786-0353.

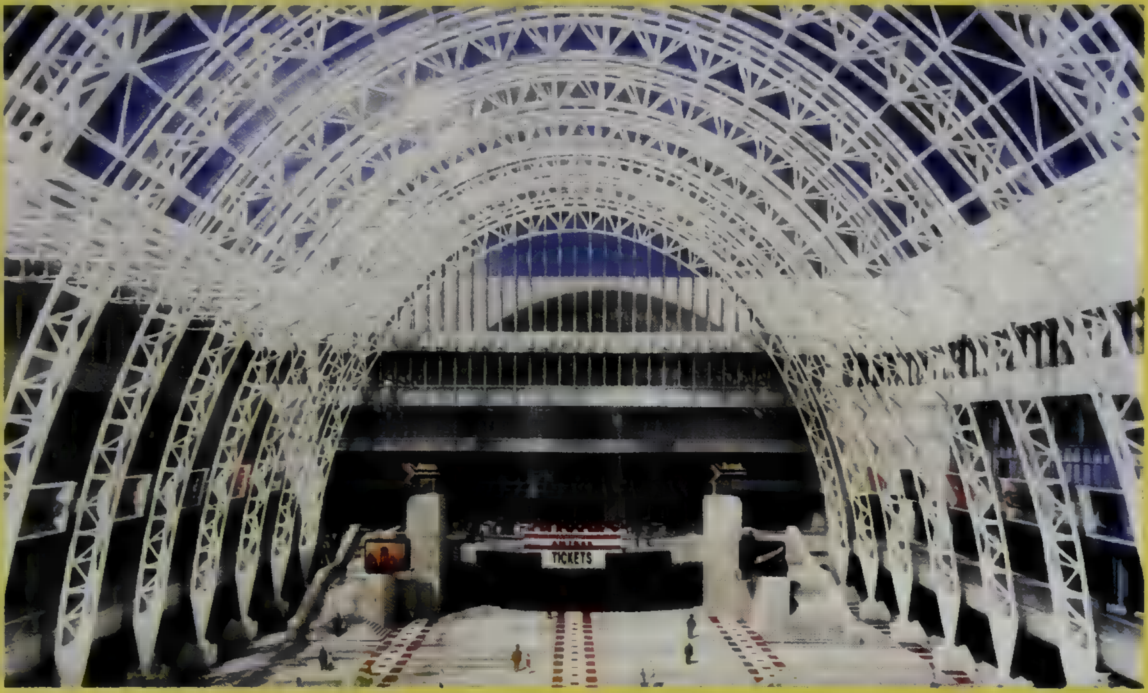
June 24 is the registration deadline for the 12,000 Hermosa Beach Pier competition. ontact Chamber of Commerce, 323 Pier ve., Hermosa Beach, Calif. 90254. 'hone: 310/372-1375; Fax: 310/798-2594.

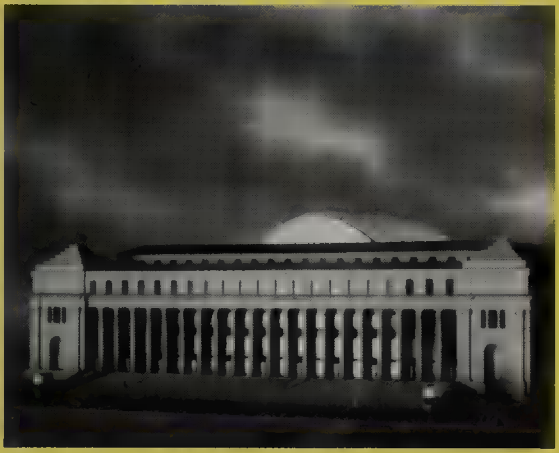
June 30 is entry deadline for Buenos Aires nternational Biennial of Architecture wards. Contact CAYC, Elpidio Gonzalez 070, (1407) Buenos Aires, Argentina. Fax: 11/54-1-566-3867 or 311-3156.

August 31 is the deadline for overseas en-ries in the Makmax Membrane Design ompetition. Contact Shinkenchikusha Co., td., 2-31-2 Yushima, Bunkyo-ku, Tokyo 113, apan. Phone: 011/3-3811-7101.

New York City

Can Penn Station Rise Again?





Some 30 years after the razing of the McKim, Mead & White masterpiece, New York's Penn Station—a shock that jolted the U. S. preservation movement back to life—HOK plans a monumental gateway Amtrak station across the street in McKim, Mead & White's Post Office. The plan releases Amtrak from its current claustrophobic and basically designless underground facility, but New Yorkers and travelers who still mourn the original may be vaguely offended to find it recast as references and gestures couched in airline-terminal idiom. *Judith Davidsen*

Los Angeles

Design Professionals Coalition Mends L. A.

Jeff Chusid

The Design Professionals Coalition has organized architects, landscape architects, students, and engineers to help St. Elmo's Village—a group of bungalows and garages that had evolved into an African-American arts center—reimagine its future. As a result of a charrette, a local utility agreed to train neighborhood youth to weatherize the bungalows. The Village is assembling a proposal to expand the complex. The Coalition works with communities for whom last year's uprising was only the latest step in distintegration. *Aaron Betsky*

Books

Briefs

The Sourcebook for Sustainable Design, *edited by Andrew St. John, produced by Architects for Social Responsibility of Boston, 1992, $25.*
Less intimidating than the AIA's *Environmental Resource Guide*, the Sourcebook provides a wide variety of information on "green" products and materials organized according to the 16-part CSI format. An introduction for each division provides an overview. Actual products are named and described according to standard specification sections. Available from the Boston Society of Architects, 52 Broad Street, Boston, Mass., 02109 617/951-1433, ext. 221

Crime Prevention Through Environmental Design, *by Timothy D. Crowe and the National Crime Prevention Institute. Boston: Butterworth-Heinemann, 1991, 241 pages, $34.95.*
It's rare that such an unglamorous subject gets such sensitive treatment. Though the writing is stilted, and the diagrams sometimes crude, this book provides a tremendous amount of useful information about the security issues that affect a wide variety of building types. More than two dozen examples from among 10 building types are provided. This volume is a worthy successor to Oscar Newman's pioneering (and out-of-print) classic, *Defensible Space.*

Exposed Structure in Building Design, *by Charles [illegible], Richard Tomasetti, Janice [illegible] Joseph. New York: McGraw-Hill, [illegible] pages, [illegible].*
The book has [illegible] winning arrangement. The first half [illegible] conversations with [illegible] and engineers, in which [illegible] structure offers [illegible] areas of common [illegible] ably piqued the [illegible] the book advises [illegible] pose structure, focusing o[illegible] parking structures, and long[illegible] structures. ■

Environment

CFC Ban Means Big Hvac Changes

The manufacture of chlorofluorocarbon (CFC)-based coolants will be banned at the end of 1995 as a threat to the earth's ozone layer. By following strict regulations, owners can continue to use existing CFC-based equipment, but the price of coolant will soon rise steeply. Manufacturers have recently begun to bring alternatives on stream (some existing equipment can be converted). *HFC 134a* will likely be available soon for nearly all classes of cooling equipment. It is appealing because it is safe and has no effect on the ozone layer. It does affect global warming, but many regard this as a lesser evil. *HCFC 122, 123* are used where other substitutes are not yet viable. They do affect the ozone layer but much less than CFCs and fo a shorter time. They will be phased out in 2020 and 2030. *Lithium Bromide* is safe an inert but suitable only for absorption units, which are most cost-effective when steam-powered. They can also be gas-fired.

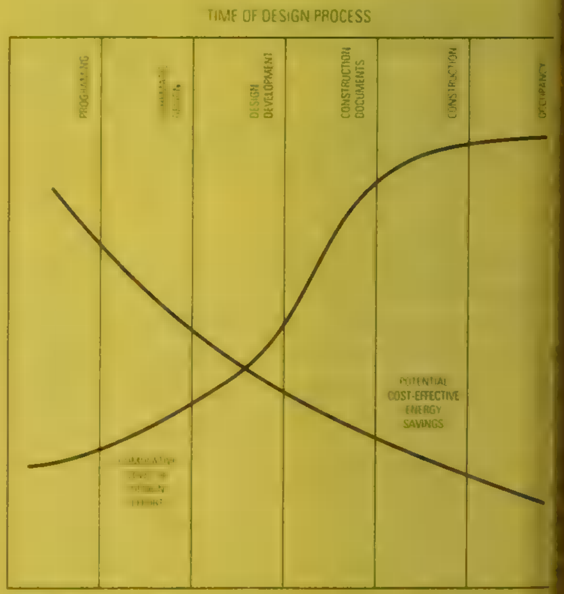
The EPA offers additional guidance through its Stratospheric Ozone Information Hotline 800/296-1996. *J. S. R.*

Environment

Profiting from Conservation

According to the Rocky Mountain Institute, an energy-policy and resource-conservation advocacy group, the building-design process remains a significant barrier to the wide-scale incorporation of environmentally responsible practices and technologies. Its research director, Amory Lovins, notes that standard design practice rewards overspecifying equipment, while penalizing innovative solutions [RECORD, December 1992, page 16 and February 1992, pages 34-35]. In a new effort to break down these barriers, the Institute has spun off a for-profit subsidiary, E Source, Inc.

Dues-paying E Source members (who include facilities managers and consultants) become eligible to receive regular reports on emerging technology and invitations to annual forums. The company also issues broad "Strategic Issues Papers." One of them, "Energy-Efficient Buildings: Barriers to Design," details disincentives to conserve, from financing through design, construction, and maintenance. Because a comprehensive design approach can deliver the most conservation at least cost (chart), Lovins proposes design-fee restructuring to reward demonstrably more efficient schemes. Membership is not inexpensive ($2,000 for most architects—the lowest category), but experts in conservation are busy these days. E Source, Inc., 1050 Walnut Street, Boulder, Colo. 80302 (303/440-8500) ■



Designed-in conservation costs least.

n End to Forest-Policy Gridlock?

y mid-June, the Clinton Administration id it would propose a new management ap-oach for the old-growth forests in the acific Northwest. The plan is important not st as a long-hoped-for resolution of log-ing jobs versus protection of the dangered spotted owl, but as a sign of w the new administration will handle a ide range of environmental issues.

the short term, decisions made on the fu-re of the Northwest woods will affect the ailability, price, and quality of softwood aming lumber. Timber interests and envi-nmentalists were heartened by President linton's decision to hold a "timber summit" Portland last April—it seemed to mean an d to years of rhetoric and administrative ridlock. Since judges set aside some 5 mil-n acres of forest in Washington, Oregon, d California (out of nearly 90 million for-ted acres) to protect an estimated 3,602 irs of spotted owls, timber harvesting in ashington and Oregon has been halved. he U. S. Fish and Wildlife Service projects ,000 lost timber jobs by 1995 if there are set-aside changes. Since most of these bs are in small towns where there are few her opportunities, the impact is already evastating.

mber prices way up . . .

imber acreage in private hands has not en able to make up for the shortfall from e national forests. The result has been yrocketing lumber prices as homebuilders ticipate a long-awaited surge in demand. the last couple of years, lumber has shot from about $200 per 1,000 board feet to ound $320 last January, to a record $500 r thousand in March. Homebuilders said e rise could stall the economic recovery, lding anywhere from $4,000 to $7,000 to e cost of a new house. Since March, prices ave slackened, but long-term shortages will ean higher lumber prices. The timber in-istry has argued since the 1950s that it ants more than it cuts, creating a "sustained yield" of timber. If so, environmentalists argue, why must the nation continue to harvest old-growth—the magnificent forests, 200-or-more years old, that now make up such a tiny percentage of national forest land? (How much is still in dispute—see RECORD, December 1990, pages 39-45.) Mark Rey, vice president of the American Forest Products Association's Forest Resources Group, says that current set-asides have such broad impact because "about 60 percent is not old-growth, but second-growth."

In the short term, decisions made on the future of the Northwest woods will affect the availability, price, and quality of softwood framing lumber.

A compromise, if one is forthcoming, will likely involve using a variety of so-called "new forestry" techniques within old-growth or mature second-growth stands. Among these are harvesting trees at longer intervals and harvesting selected trees to maintain old-growth characteristics within a forest. This kind of harvest costs more than conventional, widely decried clearcutting, and would yield many fewer board feet per acre. Rey warns that such techniques "won't work" if logging is banned outright over large tracts.

Environmentalists are arguing for a broader approach to environmental management that will avoid the simplistic owls-versus-jobs formulation. Saving old-growth has depended on the spotted owl's listing as an endangered species. Environmentalists have found again and again that by the time a species is listed, its habitat is so threatened that a comeback is a heroic undertaking. Environmentalists would like to see the administration focus on *ecosystems.* Since old-growth is unquestionably an ecosystem, such a designation will not likely be looked on kindly by timber interests. However, if elements essential to the preservation of that ecosystem can be defined, then it's possible to develop a more flexible approach to what can or cannot be done in the forests. An ecosystem approach could be widely applied, offering a fresh way to look at other contentious environments such as wetlands or the scrublands supporting a rare bird that are in the path of development in California.

The future of lumber

Whether today's prices are panic-driven or long-term remains to be seen. With the Clinton Administration already proposing an end to uneconomic logging on more than a third of national forests by 1998, and a likely mandate for costlier harvesting techniques, prices are likely to stay high. Environmentalists argue that these changes will simply reflect the true cost of timber harvested in a sustainable manner.

Softwood framing lumber is uniquely flexible in its potential configurations, easy to erect, and—even now—inexpensive. Over the years, however, lumber may gradually be seen in a different light. After all, America and Canada are among the few developed countries where wood framing and siding is widely used. Concrete framing and stucco or masonry cladding is much more common elsewhere. *James S. Russell*

What's New in High-Performance Glass Coatings

Spin-offs from the car business add variable-transmission, spectrally selective, and energy-generating products to the architect's glass-design tool kit.

The car business, with its market- and consumer driven performance and production-cost requirements, is the engine that pulls the development of much architectural flat glass. Research on automotive glass, which must perform safely in hot, humid, cold, dry, abuse-prone environments *and* be easy to handle and not cost too much, has pushed development of thin-deposition coating technologies that may add another (perhaps even-more confusing) stratum to the range of high-performance glass choices.

Electrochromic glass

The search for a practical variable-transmission electrochromic glass is the glass-industry equivalent of the space program. Glass coated with a one-micrometer-thin ionic layer responds to tiny electric charges by varying in opacity from 10 percent to over 80 percent, and needs virtually no power to sustain the translucency selected. The wavelength-specific characteristics of the metallic oxides used enable the coating to block incoming solar heat (or bounce interior-generated warmth back into a room in winter) while admitting daylight. Even though researchers at Tufts University's Electro-Optics Technology Center, led by Dr. Ron B. Goldner, have cycled electrochromic windows through the equivalent of 50 years of hard use, the technology's clean-room-level production requirements have kept costs too high for most building applications. So far, the most common electrochromic applications are the auto-dimming mirrors and sunroofs offered as optional features in some 1993 cars.

Photochromic chemistry, which permits a material to fade from clear to light-diffusing obscure as the ambient temperature rises, has potential as a variable-transmission glazing. However, a prototype, Chameleon acrylic panels, did not perform well in residential use as the panels could not consistently reach the temperature level needed to trigger the change from clear to opaque.

Spectrally selective laminate

Spectrally selective clear glass aims to transmit cool daylight, the visible-light portion of solar radiation, while rejecting unwanted heat-generating infrared and UV radiation. Southwall Technologies, inventors of Heat Mirror, a suspended film used in insulating-glass units, developed a laminated configuration for automotive use that is now available as an architectural glazing. Suggested for view-sensitive applications where a high R-value is not paramount, the very low-reflectivity glass is an alternative to standard tinted or reflective products. The technology stacks several micron-thin layers to achieve light-transmittance levels of 70 and 75 percent in a clear product that has all of the performance and fabrication attributes of standard laminated glass. (As the shading coefficient numbers get lower, from 65 to 55 to 45 percent, the rejected heat starts showing up as reflected light.)

Called California Series, the glass can be butt-glazed and bent, and meets the hurricane-force wind loading requirements of South Florida. One current application is the renovation of a landmark Reading, Pa., hospital, where California Series laminate was selected to match the appearance of existing historic fenestration and panning profiles while meeting just-legislated energy-conservation guidelines. Proprietary glass-design software, available on-line, reconciles the premium price (over standard insulating units) of various Heat Mirror products by factoring in hvac and other savings.

Photovoltaic curtain wall

Photovoltaic glass seems to be closer to technology-transfer liftoff than electrochromic coatings, making possible a building envelope that generates electricity, not just saves it. Once more, automotive applications provided a commercial push for a product invented for the space program, when thin amorphous-silicone films were used in car sunroofs to generate enough electricity to charge a battery or run a fan. There is an inherent cost advantage to architectural photovoltaic components, as a major part of the budget in a solar array goes to building the structure to carry the panels. Thin-film PV could be placed in an IG unit and used as a spandrel or as an opaque panel [illegible], (though about 5 percent daylight is transmitted, giving an interior an [illegible] as the PV material captures the blue [illegible] from the spectrum, letting red and yellow through). Photovoltaics integral with

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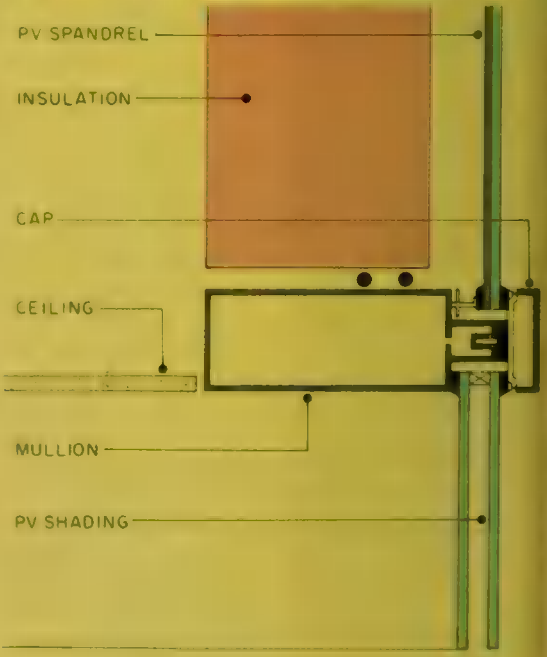


3

e structure of an office or shopping center ill generate electricity just when it is most eeded to buffer peak load rates charged for aytime cooling or heating. (Many utilities ave a 4:1 peak/off peak rate differential.)

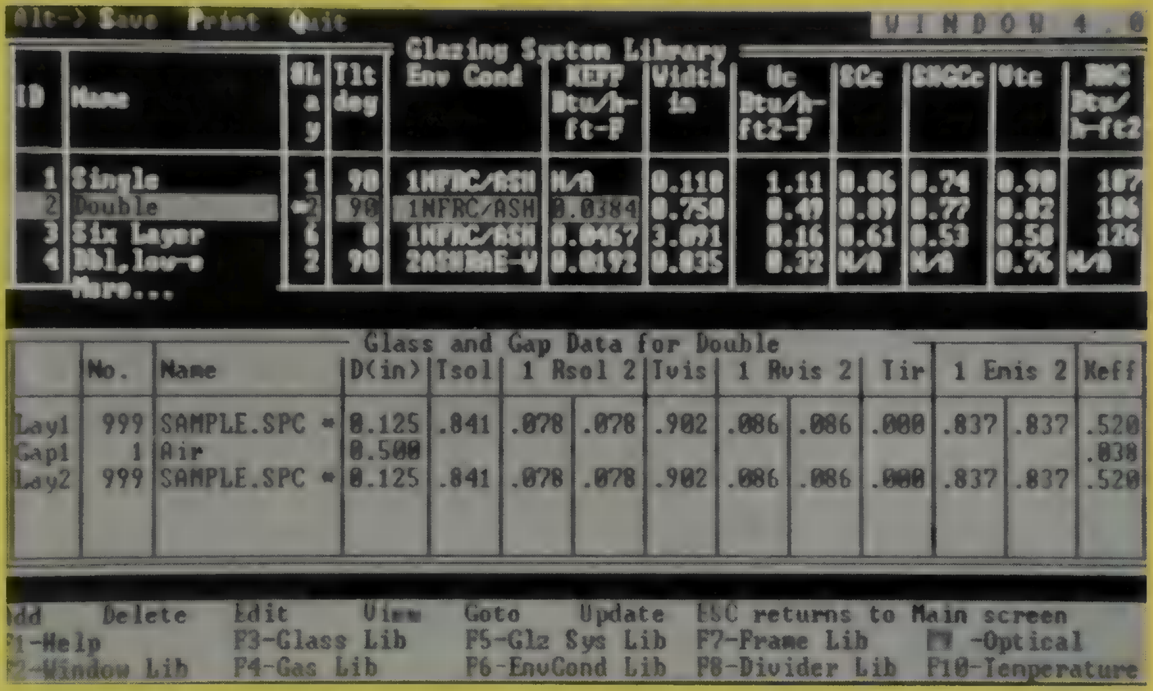
ybrid PV films are more transparent, peritting their use where some view is needed. igher levels of light transmission, even a iew out through PV panels, is achieved by ser-scribing the film in a linear or dot-like attern that admits full-spectrum sunlight. his will, of course, reduce the total amount f electricity produced by the particular anel.

dvanced Photovoltaic Systems, Inc., of rinceton, N. J., has developed a highly relible amorphous-silicon module that is large nough—2 ft 7 in. by just over 5 ft—for interation into the building envelope. These in-film cells, described as a deep rose-black enlivened" by the current-collecting grid ructure, have great potential for use as a pandrel glazing. Just 1/4-in.-thick, the panls can be installed by conventional chniques; the interconnecting wiring on e reverse resembles a window-security etup. The back, inside-facing side has a reective surface which could add a decorative lement to sloped or atria installations. urtain-wall applications would be fireafed, as shown in the detail (3).

rchitect Gregory Kiss, of Kiss Cathcart nders Architects, New York City, designed cube-shaped, two-story-high control center at alternates vision lights with photovolic panels within the same Kawneer aming system. From the exterior (1) the V modules blend with the vision lights. rom the inside (2) the scribed stripes of PV lm are visible, creating a shading effect. or the laminated-glass PV unit alone, exuding the associated costs of wiring the anel into an electrical grid, costs are in the 11 to $16 per sq ft range, and generate bout 5W of peak power psf.

an F. Blatterman

Glass-selection software from LBL



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 1 Single       1   90 1NFRC/ASH  N/A     0.110    1.11  0.86  0.74  0.90   107
 2 Double      ←2   90 1NFRC/ASH  0.0384  0.750    0.49  0.89  0.77  0.82   106
 3 Six Layer    6    0 1NFRC/ASH  0.0467  3.091    0.16  0.61  0.53  0.58   126
 4 Dbl,low-e    2   90 2ASHRAE-W  0.0192  0.835    0.32  N/A   N/A   0.76  N/A
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Gap1    1  Air           0.500                                                  .038
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1-Help             F3-Glass Lib         F5-Glz Sys Lib      F7-Frame Lib       F9 -Optical
2-Window Lib       F4-Gas Lib           F6-EnvCond Lib      F8-Divider Lib     F10-Temperature
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WINDOW 4.0's Glazing System Library screen summarizes glass-performance data.

Trying to pick the perfect glass, one that responds to its climate in an energy-efficient manner while looking good from both inside and outside, is like solving Rubik's Cube. To select for wind loading, impact safety, shading coefficients, daylighting, thermal values, and esthetics can be a dilemma: the tinted, highly reflective glass that produces the best energy-conservation numbers might have the lowest level of light transmission, giving interiors a cavelike ambience.

Expert advice would be to work with both WINDOW 4.0, Lawrence Berkeley Laboratory's PC program that calculates the U-value, solar-heat gain, and visible-light transmittance performance of window glass, and proprietary structural-load software such as Monsanto's WIND. After narrowing the field as far as solar-control and load performance, the architect can split the difference on appearance and cost.

WINDOW 4.0 runs on IBM PCs or clones with DOS 2.1, and needs 512kb RAM. An extensive update of WINDOW 3.0 by Lawrence Berkeley's Windows and Daylighting Group, it will generate a whole-window (frame, glass, and spacer) U-value consistent with the NFRC ratings. A large Glazing System Library (screen shown above) gives thermal and optical properties—transmittance, reflectance, and effective conductivity—for hundreds of possible combinations of Low-E coating, tint, sputter-coated film, and, for laminate configurations, various solar-control PVB interlayers. This data, as well as numbers from other Libraries—Glazing System, Frame, Divider, even Gas Fill—are based on both empirical data from LBL field work, and proprietary information from manufacturers like Cardinal, PPG, and LOF. Copies are free under a cooperative agreement from Bostik Construction Products, 800/523-6530.

RESFEN 1.3, now in Beta, puts a particular window assembly into a particular house in a particular place. A residential energy-performance simulation eventually intended for the homeowner as well as the architect, it has an easy-to-use point and click graphic interface. It calculates peak-level and annual heating and cooling energy use and costs, based on a home's geographic location, wall type (masonry or frame), fuel cost, internal loads and hvac type, and eight choices of window orientation. The user selects from seven window types (casement, awning, double-hung, etc.) and specifies the glazed area as a percent of floor area. Glass-performance data comes from WINDOW 4.0. For availability information on the soon-to-be-released program, and its commercial cousin, contact Robert Sullivan, Windows and Daylighting Group. FAX 510/486-4089. ■

Special-Use Architectural Glass

Glass. . .

Driven by expanding, hotly competitive markets and environmental concerns, more innovative products were developed in recent years for glass and glazing than for any other building category. But the pace of high-performance glass introductions has slowed in the past year, while product managers wait for the next generation of coatings to emerge in a cost-effective format. As for glass sales, many industry spokesmen polled by *Glass Magazine* in its 1993 forecast saw the year as being marginally—maybe 2 percent—better than a very down 1992. Potentially stronger areas are rehab projects, especially in late '50s and '60s strip shopping centers, and in the area of such special glass installations as security glazing and ADA-compliant automatic doors. And an optimistic Nick Limb, manager of architectural products for LOF, sees opportunities for architectural glass driven by the 1992 passage of the Energy Policy Act, promoting energy-efficient glass such as his firm's Energy Advantage low-E product.

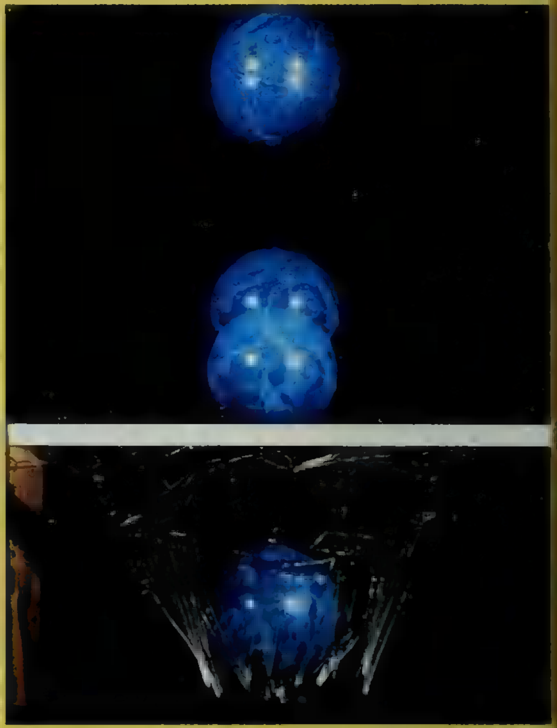
. . . and windows

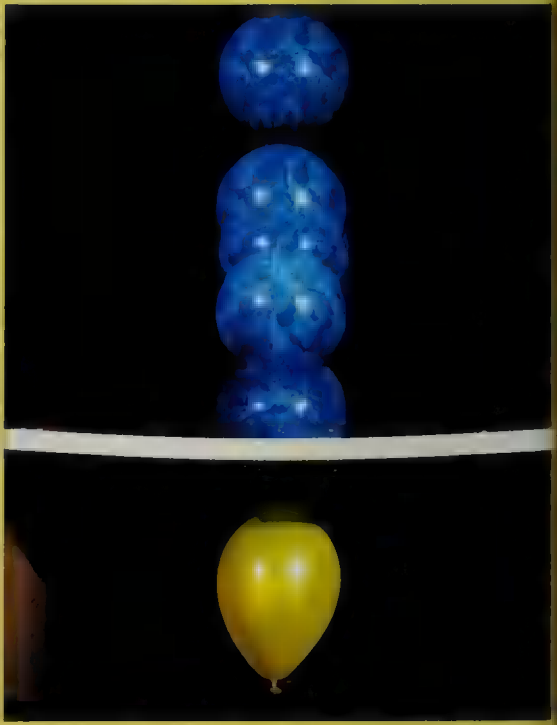
Lacking the markets that would drive innovation, the window business is in a consolidating frame of mind. Rather than introducing more innovative products, companies are incorporating the thermal values and test standards developed through the National Fenestration Ratings Council [RECORD, June 1991, page 40] into residential windows. These standards represent a numerical means of comparing the thermal performance—the U-values—of different windows as total assemblies of glass, spacers, and frame construction needed in cooler, heating [illegible]. The ongoing, much more [illegible] is how to compare [illegible] of complex windows [illegible] optical characteristics [illegible] devices. Some [illegible] are included in [illegible] tories' RESFEN [illegible] numbers from NFRC [illegible] before 1994. *J. F. B.*

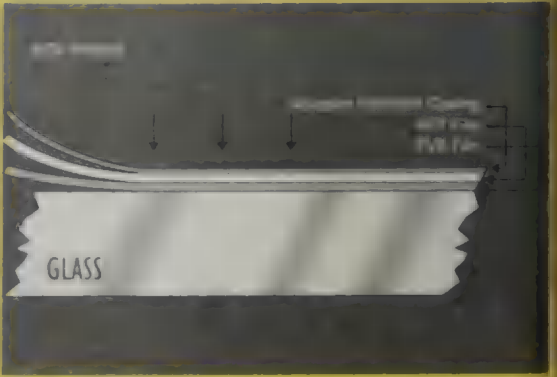
300. Single-pane laminate

A new specialty division of DuPont, maker of the Butacite polyvinyl-butyral interlayer for laminated glass, is now marketing SentryGlas, a composite film normally applied to the interior surface of glass, that gives a single pane many of the performance and security benefits of traditional, two-layer laminated glass, but with only half the weight and thickness. The three-layer film is factory-applied using standard laminating equipment under a vacuum, which eliminates the peeling and optical distortion associated with field-applied films. The composite film is based on an antilacerative product used in car windshields, and protects against injuries caused by minute slivers of glass (spalls) flying from the interior side of glass. The photos (right) demonstrate SentryGlas performance compared to standard glass under the impact of a 16 lb weight dropped from 10 ft. The composite also passes the more severe UL 972 test, in which an 1/8-in.-thick pane must resist penetration by a 5-lb shot dropped from 40 ft. It is an approved safety glass, and needs no special moisture-resistant edge treatment.

Ongoing full-scale testing on glass laminated with the PVB/polyester composite is being performed at Texas Tech, and is demonstrating in-use characteristics similar to standard, two-light laminates with respect to wind loads and blast resistance. Preliminary results indicate that SentryGlas qualifies for installations where codes might require two-light laminates or tempered glass. The diagram below calls out components of SentryGlas: a special, moisture-resistant PVB interlayer next to the glass; a layer of optically clear PET; and an abrasion-resistant coating. This surface is not affected by common solvents such as acetone or gasoline, and can be cleaned with standard window cleaners. DuPont Company, Advanced Glazing Products, Wilmington, Del. ■







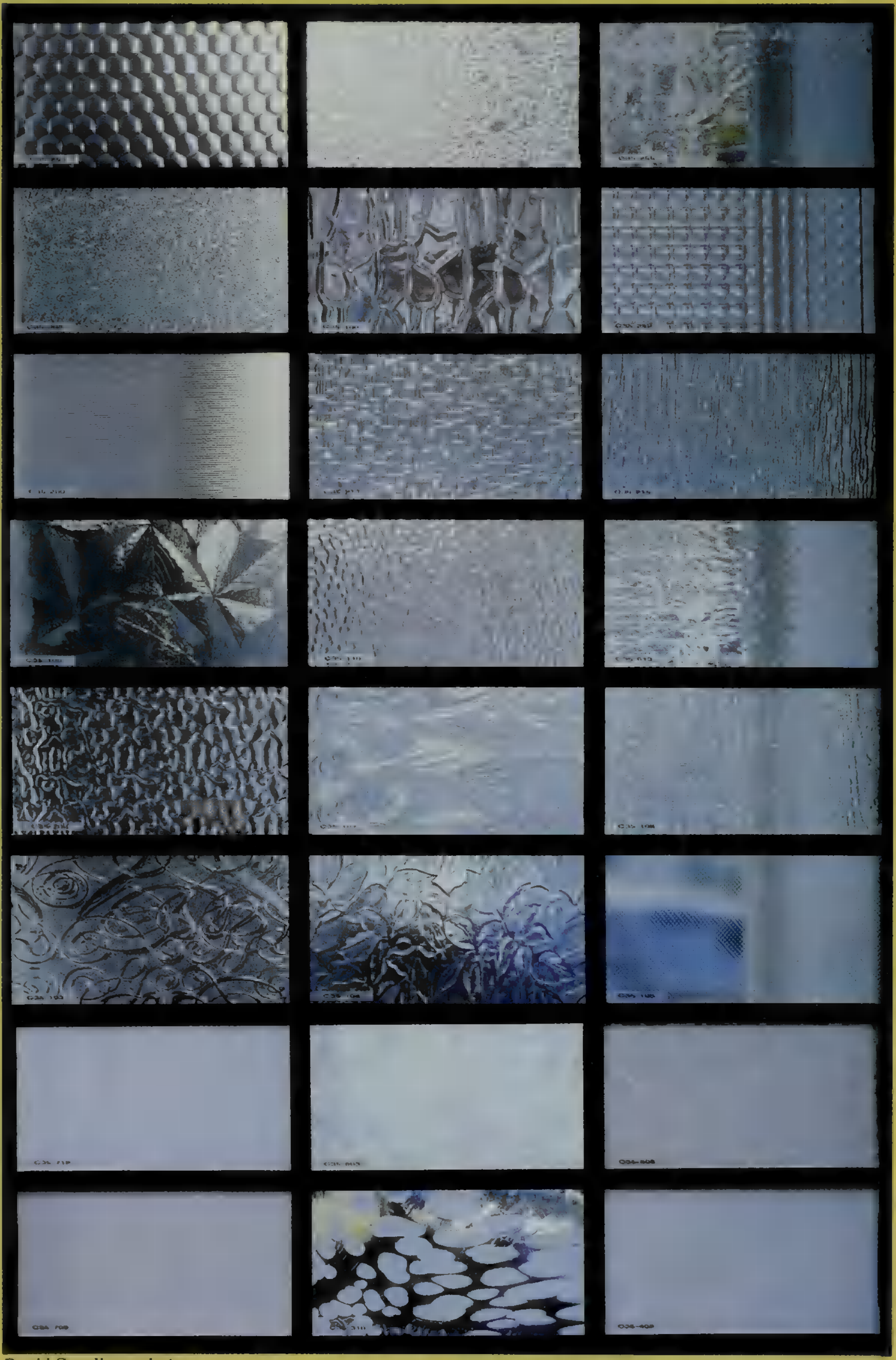
Vhile big glass-makers wait for a better '94, ther vendors have come up with innovative glass naterials for the building designer.

01. Clear obscure glass

. A. Bendheim, a New York-based firm long nown for imported, hand-blown glass for istoric-renovation projects as well as for art nd stained glass, is now making available a ide range of patterned glass in sizes for rchitectural applications. The range inludes products from both foreign and omestic sources. While many of the decoative glasses shown at right are not in iemselves new patterns, company vice resident Don Jayson claims that this is the iost extensive selection available in North merica from a single source.

ollectively called Cleartex, the line includes olled glass, with a decorative texture ressed into one side of molten glass by a ietal roller; mechanically drawn glass in eeded and fluted patterns; and mouthlown art-glass sheets, which can have a onsistent color or a mottled effect. The olled and drawn products are primarily ear; the blown glass is available in a range f soft and deep colors. Color can be added o an otherwise clear textured glass by lamiating it to a sheet of colored glass. The tandard Cleartex glass comes in sheets bout 60 by 80 in., and can be installed in oth interior and exterior applications. arger-size panels are created by a seamiminating technique, butting two patterned ghts edge to edge and laminating them to a ionolithic glass light.

endheim has the capacity to laminate texired glass using either heat and pressure r a liquid-resin technique; some glasses can e tempered, a less-expensive option when a afety product is needed. Different patterns iounted back-to-back have an entirely new sthetic, expanding the custom architectural otential even more. Bendheim Architecural Glass, New York City. ■



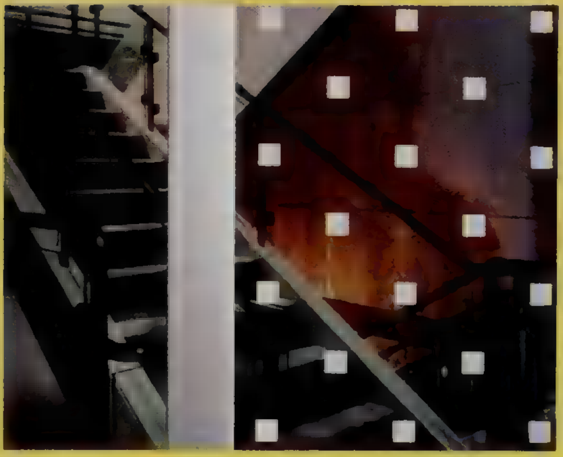
David Sundberg photos

302. Printed interlayer

Originally introduced on a custom-pattern basis primarily for interior applications such as partitions and cabinet glazing, ChromaFusion laminated glass now comes in an expanded range of standard designs and colors. Maximum sizes are larger as well—58- by 133-in.—making the colorfast laminate suitable for exterior glazing and curtain walls. Developed by Claudio Cesar, an artist with special expertise in inks and pigments (with research and marketing assistance from DuPont), the architectural-graphic glass is produced in a new 28,000-sq-ft factory in Rhode Island.

Standard designs come in three groups: 14 geometrics, such as Negative Squares (1), Horizontal Lines (2), and Negative Grid (4); nine textures, such as Wisp (3); and five sandblast-effect densities. Since designs are printed on film and sandwiched between two sheets of glass, the surface will not fingerprint, stain, or wear. And unlike frit glass, the reflectivity of the pattern is identical from both viewing sides. Patterns are crisp, and can be specified in a range of colors and combinations of colors, including metallics. Costs for ChromaFusion, priced according to the size and specs of the glass lights and the volume of the order, start at about $8.50 per sq ft, becoming more competitive with other glass-graphics techniques as complex, multiple-color treatments are specified. Since the dot-matrix pattern is printed on the interlayer, almost any graphic, such as halftones or line art, can be reproduced, incorporating the subtle shading of the original artwork even when greatly enlarged.

ContraVision, a companion two-way-reading laminate product, was used by architects CRSS, Inc., to create a special Presentation Center within a larger showroom space. A 20-ft-long glass wall presents a transparent face [illegible] customers, set off by a corpo- [illegible] once inside the space, a [illegible] ible, an old news photo digi- [illegible] and reproduced across [illegible] relative brightness [illegible] sparency. [illegible] phics Glass [illegible] glass, with the [illegible] on, and UV [illegible] laminate glass. [illegible] ngame, Calif.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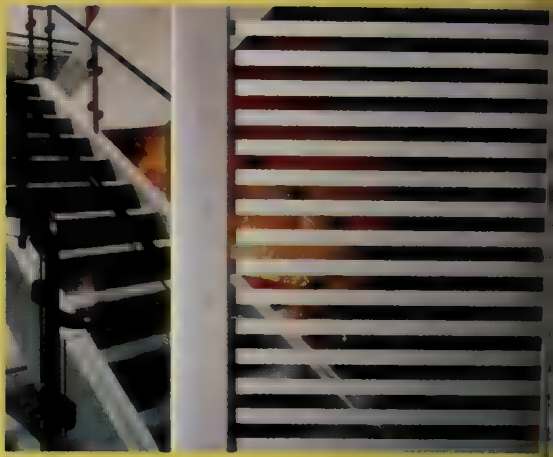
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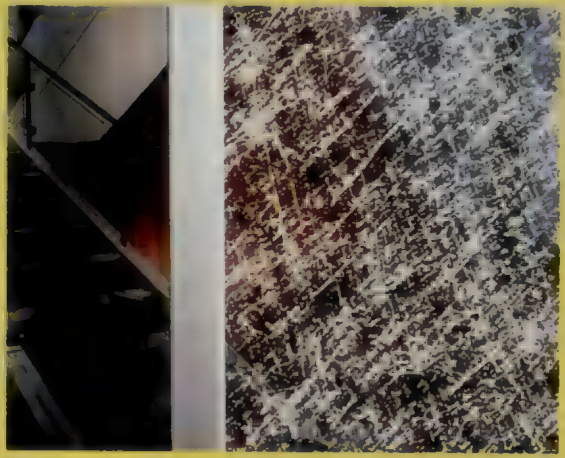
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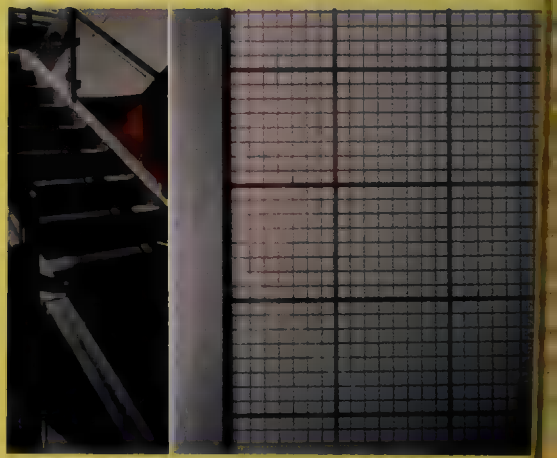
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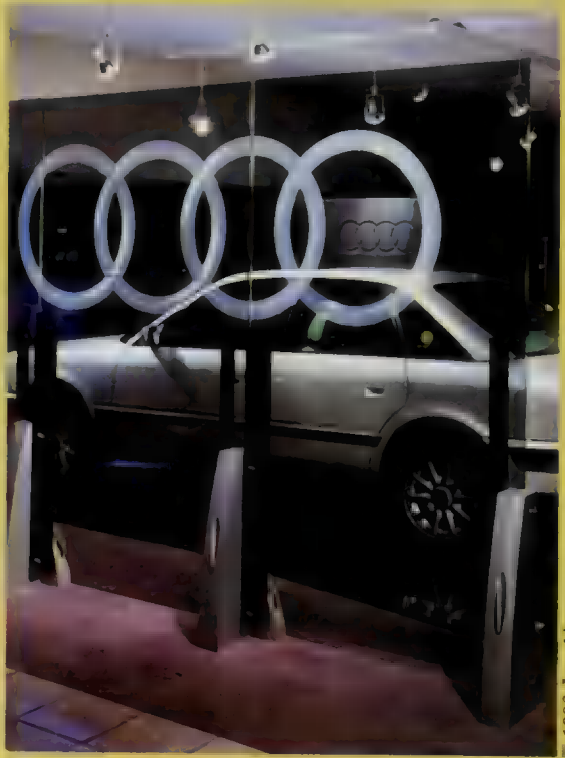
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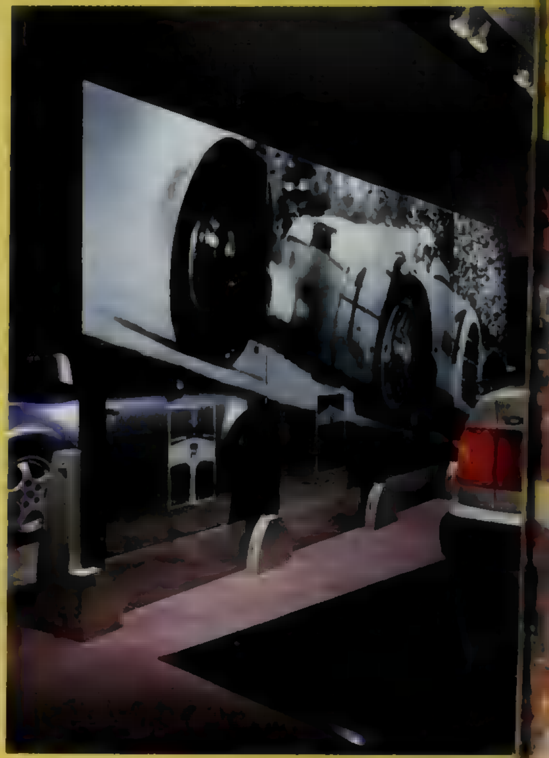
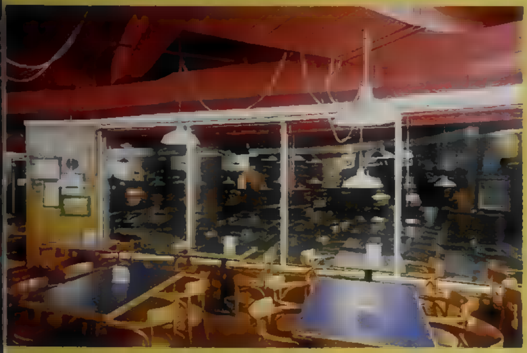
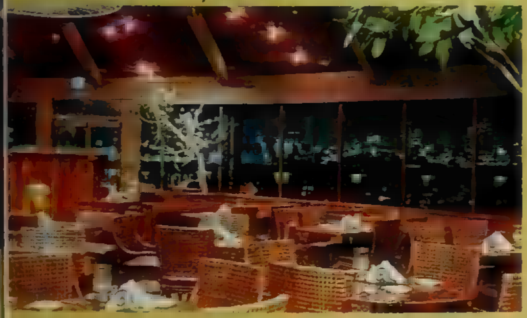

5a

3. Nonreflective glass

iiran is a multiple-layer interference coat- ; for flat glass that reduces reflected light less than one percent. (Standard plate ıss reflects from 8 to 15 percent of inci- ıt light, depending on whether it is single- double-glazed.) The coating is weather- ıof, and is ordinarily applied to both sides a glass light. It works like the matte glass ed to protect artwork, keeping the view ar and free of distracting and confusing lections. The dining room below has stan- rd plate-glass windows, which reflect the minated interior after dark, essentially cking the view for diners at any distance m the windows. In comparison, the res- ırant at bottom (designed by Louis Owen, :., architects) has the identical view (it's on floor above) but large (4- by 9-ft) Amiran hts permit an unobscured view of the attle skyline beyond. For a storefront, ere the view is from the outside in, the ıreflective glass brings displays visually ser, without reflected street clutter, and luces the need for overhangs or awnings control glare.

de in Germany, Amiran glass is being cked in this country in sizes up to 10.14 by ft, and in five thicknesses. Schott rporation, Yonkers, N. Y.



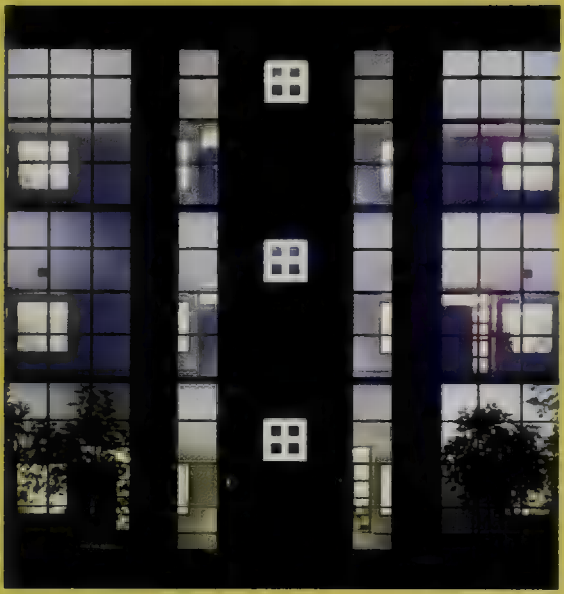


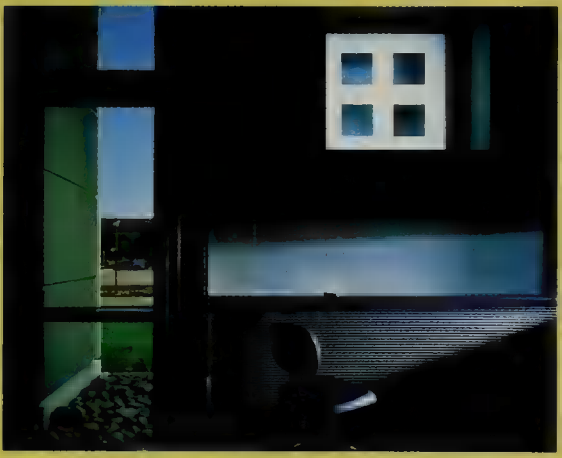
304. Multilayered decorative glass

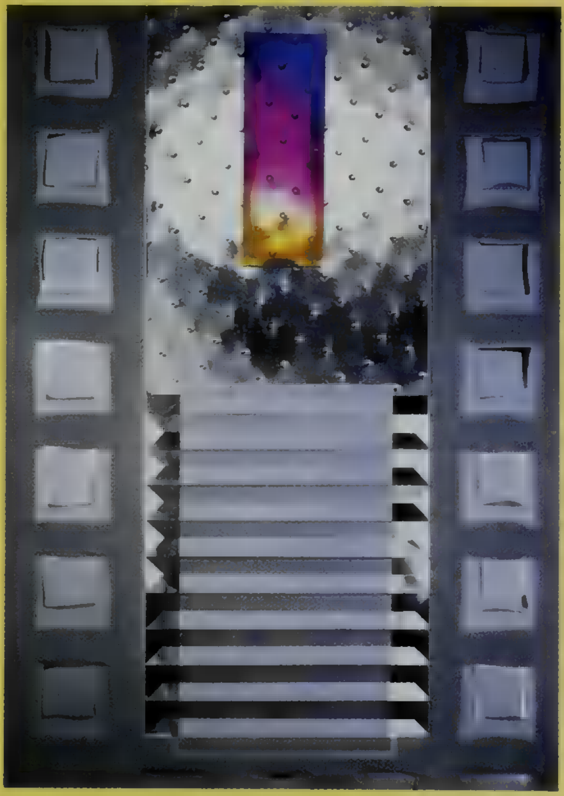
The Inner-Lite process, developed by glass artist Gordon Huether, "suspends" colorful beveled, etched, or textured hand-blown art glass within an energy-efficient insulating unit. The technology is said to permit use of large-scale panels of decorative glass on exteriors as well as interiors in healthcare, school, and other public areas where maintenance might be a problem. No matter how intricate the interior glass pattern, the architectural glass is supplied to the jobsite as a glazed and sealed unit ready for installation in standard-dimension framing.

Pictured (right, top and middle), the Bio-Medical Research Facility at Stanford University (by Stone, Marricini & Patterson, architect) has suspended shapes of German blown glass set within panels of tinted Solex glass. (High-performance commercial glass can be specified for increased energy efficiency, and so that the outer lights work with adjacent building materials.) Here, the inboard surfaces of the outer glass panes have been etched, creating a light-diffusing frame for the teal-colored art-glass squares adhered to the inner light of the triple-glazed unit. A glass sculpture by Gordon Heuther (bottom photo) demonstrates some of the range of textures and colors that can be incorporated within a single panel. These include multicolored dichroic glass, colored blown glass, sharply beveled pieces that act as prisms, and hand-made seeded glass. Architectural Glass Design, Napa, Calif.

Literature from glass fabricators and manufacturers is featured on page 142







Sustainable Development: How to Make It Work

By Jonathan Barnett

Uncontrolled urban growth is probably the greatest obstacle to sustainable development in the United States. Cities are spreading over the natural landscape far faster than population increases or economic progress require, while older urban districts with their valuable infrastructures are underused or abandoned.

The design of new buildings can enhance sustainability; but a new colony of earth-sheltered, solar houses out on the suburban fringe is far more harmful to the environment than the same number of new, conventional houses on an existing street within an established community. Building on untouched sites always destabilizes natural systems and can mean losing valuable agricultural or forest land. Access to the new development requires more roads, more trips, more extensions of the urban infrastructure; in other words, more natural resources used and more pollution created.

Despite a generation's experience with increasingly detailed federal and state environmental legislation, most urban growth is still out of control. The environmental impact statement has undoubtedly made new projects more responsive to environmental concerns, but the review process is cumbersome and applies only to major developments. Coastal zone management and stricter air- and water-quality standards have helped save sensitive dunes and wetlands, brought rivers back to life, and reduced smog. But rapid growth continues to create new environmental problems.

Most development is still the result of thousands of local decisions made by individual communities about separate projects. Development regulations in the U.S. have traditionally been delegated by the states to local government, and home rule on development issues is strongly established and unlikely to change. Private real-estate investments in separate, competing developments have been the prime mechanism for urban growth; that is not likely to change either.

Jonathan Barnett is professor of architecture and director of the Graduate Program in Urban Design at the City College of New York, and is also a consultant to several cities and suburban communities. This article is adapted from his forthcoming book on urban and regional design to be published by HarperCollins.

Sustainable development is nevertheless possible. It requires four policy innovations that are well within the existing powers of states and local government; and there are current prototypes for each course of action. Taken together and combined with existing environmental legislation, they would add up to successful regional growth management and local design.

1. Laws establishing growth limits around existing cities and relating new development to the availability of infrastructure and public facilities.

2. Local zoning that ties development directly to the carrying capacity of the natural landscape and environment.

3. Public policies that make the creation of communities the primary objective of development regulation.

4. Restoration of natural landscapes in by-passed and derelict urban areas, and other policies to restore vitality to older cities.

Growth boundaries and concurrency

Growth boundaries clearly separating land that may one day be urbanized from land that is expected to remain rural are the essential first step in achieving sustainable development. Without the boundary there is a continual tendency for urbanization to leapfrog outwards, seeking cheaper land prices, fewer rigorous regulations, and less community opposition. Without growth boundaries, zoning ordinances establish theoretical development potential far in excess of what is actually needed, property values rise according to the zoning, and banks lend money based on what the land might be worth in the future and not on current use. Consider the map at right, prepared by the Greenbelt Alliance of the San Francisco Bay Area, showing that 600,000 acres in the region are at risk of suburban-sprawl development in the next 3 years (the red and yellow areas of the map).

Only about a third of this land is likely to be used, although there will probably be some new building in each risk area noted on the map. With modest increases in density, but otherwise conventional development, only about 100,000 acres would be needed—one-sixth of the area currently at risk.

If there were less abandonment of existing cities, if more new investment went into bypassed parts of already urbanized areas, if new development were in "pedestrian pockets" or other kinds of planned communities compact enough to be served by rapid transit, then even less new land would be needed.

While development regulation is a local issue, the power to make the regulations comes from the state and, as urban regions become larger and larger, the state needs t play a stronger role as the ringmaster for local decisions.

Oregon has had state planning legislation since 1973. The law requires each community to evaluate potential economic development and community needs and the draw a growth boundary around each city. Funds for highways, transit, public facilities, and infrastructure are targeted t areas within the growth boundaries. This kind of planning is not easy. It took until 1986 for all communities in Oregon to draw up plans that met state-planning-agency standards.

Growth boundaries are not the only metho of limiting urbanization. Florida relies on the principle of concurrency: that is development should not be approved in ne areas unless it is supported by roads, utilities, and public facilities constructed on the same schedule. One problem with concurrency is that it tends to push commercial development outward from existing centers because of estimates of increased traffic congestion, even when the real remedy for traffic problems would be greater centralization of offices and retail centers in already urbanized areas.

espite increasingly detailed environmental gislation, most urban growth is still out of ontrol, argues Jonathan Barnett. Four policy nnovations, though, could change that.

oncurrency can also promote the extension f existing utility systems into sensitive ndscapes that would better be passed over. sing both concurrency and growth undaries, as Washington state does, akes each policy more effective, as the ate can establish limits to development and so moderate the pace of new construction.

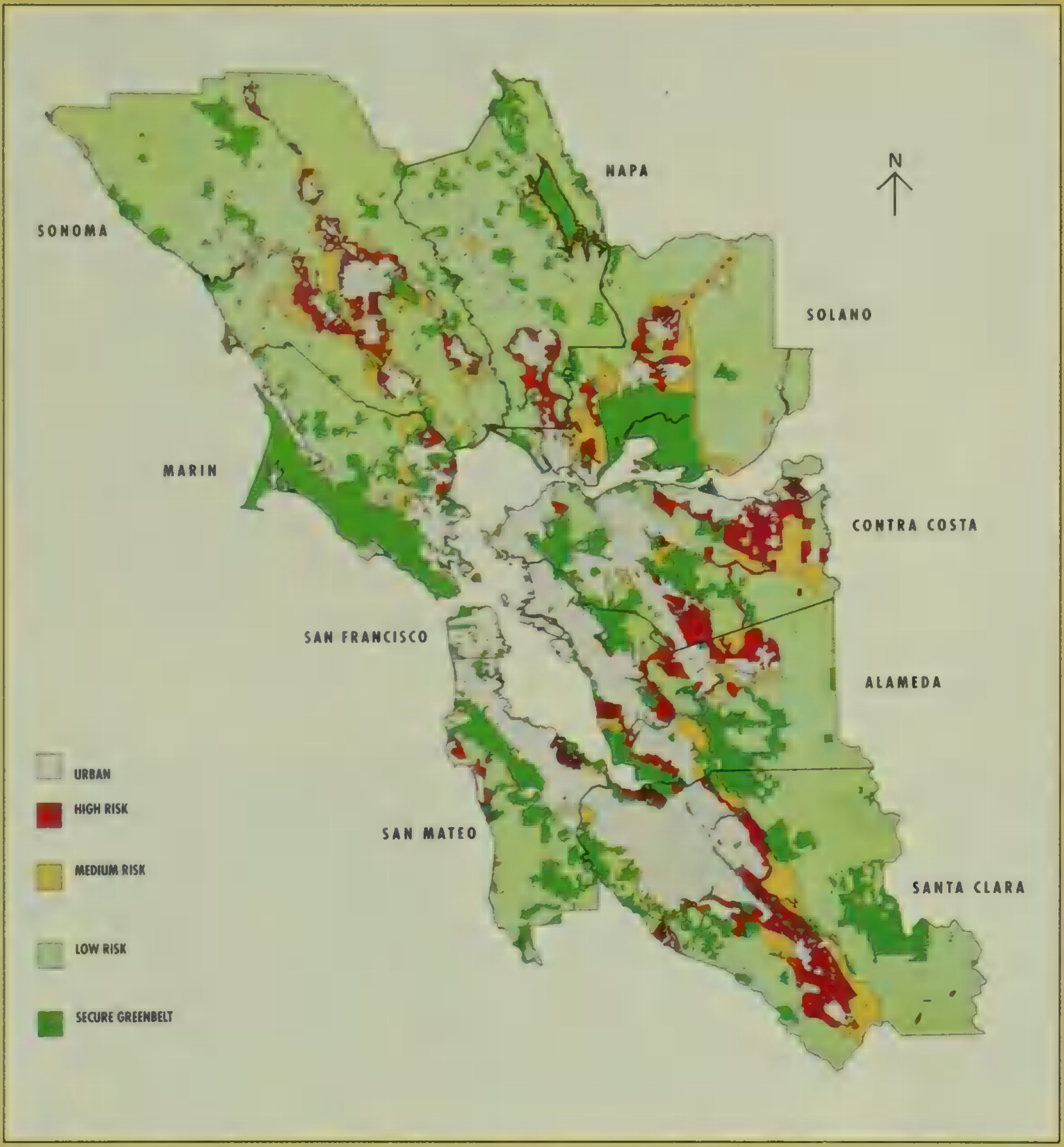
ut growth boundaries and concurrency are eneral guidelines that say little about the uality of what is built within or outside the nits they establish. More detailed growth anagement requires environmental zoning.

nvironmental zoning

ost local zoning codes assume a billiard ble surface as the ideal for a development te, a concept that comes from defining nd primarily as a commodity and not an osystem. Subdivision ordinances equently mandate regrading to bring the tual land closer to the billiard-table ideal d that, in turn, requires stripping all isting vegetation. To preserve the eco-stem, a different approach is needed. A eneration ago Ian McHarg in *Design with ature* outlined a method of classifying nd according to its carrying capacity for w development. Land judged to be the ast subject to environmental constraints ould be the best place to build. Lane endig in his book, *Performance Zoning,* ows how to take the kind of environmental alysis McHarg advocates and apply it to ning.

ost zoning codes relate development nsity to land area. Kendig outlines a stem of discounting land areas based on e sensitivity of the land to disturbance ring development. For example, a portion the site that is actually under water ould be discounted 100 percent, shoreline eas 75 percent, mature woodlands 85 rcent, slopes of 15 degrees or greater 70 rcent, and so on.

aking these discounts an amendment to a ning text can reduce development density environmentally sensitive areas without ntroversial changes to the current zoning ap or community-financed site surveys at determine precisely where the sensitive eas are located. A developer applying for a



The red and yellow areas of the map represent 600,000 acres of land that the Greenbelt Alliance estimates is at risk of development in the San Francisco Bay area over the next 30 years. Much less land is actually needed, but development is likely to be scattered, destroying far more of the natural landscape than necessary.

Restoring the natural environment in derelict parts of older cities can provide amenities seldom found in close-in urban neighborhoods.

building permit must present, as part of the application, a site map showing all natural features, with contours described at two-foot intervals. Areas of environmental sensitivity are computed, discounted, and the zoning densities adjusted accordingly.

Environmental zoning works best in association with planned-unit-development ordinances that permit buildings to be clustered in the most buildable areas of the property. Planned-unit development in turn works best in association with environmental zoning, which prevents excessive densities being transferred to the portions of the site most suitable for new construction.

Regulations that create communities

Even after development has been confined by growth boundaries, and modified by environmental discounts, successful growth management requires communities to amend zoning and subdivision ordinances to permit affirmative decisions about where and how development should take place.

When zoning and subdivision prototypes were created in the 1920s, they were intended to govern relatively small additions to existing cities and towns. These regulations were never meant to be the sole control over development of hundreds or thousands of acres; and they don't work at this scale. Blanketing the countryside with single-family-house districts and mapping endless strip-commercial zones along highways is the formula for urban sprawl. Environmental zoning can make existing ordinances more responsive to the eco-system, but, by reducing densities, they can spread out development even more.

Using already-built communities as the armature for new development within growth boundaries is one zoning strategy. When new communities are planned, they should be located only in places which are environmentally suitable for new construction and have good transportation access.

Since conventional zoning and [illegible] by themselves will not create a com[illegible] kinds of development regulation are [illegible] Andres Duany and Elizabeth Plater-Zyberk have used their experience in planning new towns, including the well-known resort, Seaside, to draft an alternative to conventional large-scale or planned-unit-development zoning provisions for Dade County, Florida. This new rule book, called a "Traditional Neighborhood Development District Ordinance," is intended to create neighborhoods instead of tracts and includes provisions that ordinarily appear in both zoning and subdivision ordinances.

Neighborhoods must be no smaller than 40 acres and no larger than 200. Larger developments must contain multiple neighborhoods. Within each neighborhood there must be a mix of residences, shops, workplaces, and civic buildings. There are rules about squares and parks, the street organization, and the size and arrangement of blocks. There are rules about sizing streets, and about the character and placement of buildings. Another model is Sacramento County's Transit Oriented Development Design Guidelines, prepared by Calthorpe Associates in association with Mintier and Associates, which seek to create centralized community districts that are dense enough to support some kind of rapid transit. Such ordinances apply primarily to new development; there is also the whole task of restoring or creating neighborhoods in already developed areas or in fragmented, partially built-up commercial districts.

The State of California authorizes local governments to prepare Specific Plans. These provisions had been in the state code since 1965, attracting little attention until some amendments were made in 1980 that made the specific plan even more effective in repairing faulty zoning and development patterns. Among the 1980 amendments: an exemption from environmental-impact-statement requirements for any development within the specific plan, as the plan itself must have an impact statement.

A specific plan is like a planned-unit development in that an individual design can become the zoning. It differs from planned-unit development in that it can apply to any number of property owners, can be prepared on a community's initiative, and—like a zoning ordinance—does not require the consent of the owners involved. Specific plans also resemble urban-renewal plans, but there is no need to make findings of blight or deterioration, nor for governmen to acquire any of the property. A local authority that has designated an area for specific plan can assess the property owne within the designated area for the costs of preparing the plan.

This powerful planning mechanism is not controversial as might be expected becaus it also provides benefits for property owners. Instead of playing zoning as a ga with winners and losers, property owners can pool their advantages and attract development that none could have hoped f individually.

Restoring the natural environment

The map at right shows 200 acres along th Mystic River near Boston and is typical of riverfront land in older American cities where derelict industrial sites—mostly bui on fill dredged out of the river and harbor- are sliced by expressways. When Carol Johnson & Associates was retained to tur this area into parkland, much of the soil w toxic to plants. The ground was turned int growing medium by blending layers of cla silt, sand, and peat, without importing topsoil stripped from other locations.

In the first stage, 80 acres were redevelop at a cost of $5 million. The transformation the riverfront gives houses in an urban Somerville neighborhood a setting comparable to choice locations much farth out in suburbia, as shown in the photogra while the park itself is an amenity rarely found in close-in urban neighborhoods.

Many depressed areas of older cities have been blighted by physical factors: railway and highway viaducts, exposed electrical substations, derelict industrial land. Highway departments routinely build landscaped noise barriers along highways i suburban communities; no such investmen is made in the inner city. It is difficult, if not impossible, to restore blighted urban areas that are in the acoustic shadow of a highway, up against a railway track, or along a polluted river edge lined with erelict industry. Areas that house only eople who have no other option are the laces likely to have the worst social roblems. Without a mix of incomes, without eople who have choices and a sense of ontrol over their own future, there can be o community.

eviving older parts of the metropolis equires more than just physical mprovements. But if growth is to be limited t the urban fringe, desirable development ocations need to be created within already-rbanized areas. Barriers along viaducts can educe noise and local effects of air ollution. The restoration of river-edge nvironments also helps restart natural ystems, leading to improvements in air and ater quality. The cost seems low for the enefits generated.

eople who live on the rapidly developing ringe of a city, who are unmoved by the light of the poor trapped in deteriorating rban neighborhoods, may be alarmed by he influx of new neighbors willing to ndure long commutes to escape urban roblems. Understanding that rural growth nd urban deterioration are two parts of the ame problem can help build a constituency or the big investments necessary to make p for decades of neglect of urban areas.

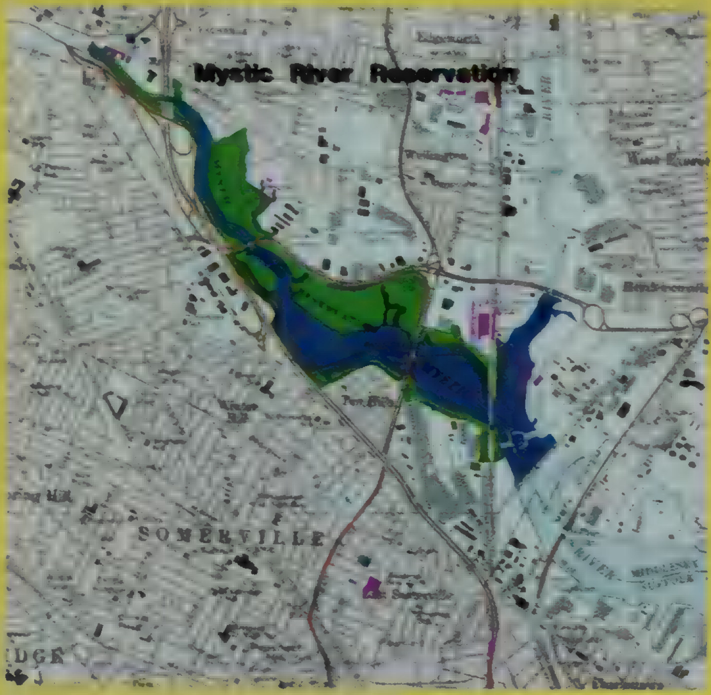
f course, the world's ecosystem is the roduct of many additional factors. Growth oundaries, environmental zoning, planned ommunities, and the restoration of derelict ityscapes will not by themselves create ustainable development. But there won't e sustainable development without them. ■

ome suggested reading that gives more etail about the complex interactions of nvironmental and planning issues:

. *Building Sustainable Communities*, a eries of 11 handbooks developed by the lobal Cities Project in San Francisco. 15/771-3910.

. *Balanced Growth, A Planning Guide for ocal Government*, published by ICMA, the nternational City Managers Association. 02/289-4262.

. *Sustainable Cities*, the proceedings of a 992 conference, published by Eco-Home edia in Los Angeles. 213/662-5207.



The Mystic River Reservation, designed by Carol R. Johnson and Associates, creates a riverfront park from contaminated and sterile land, once used for industry and then abandoned. The park creates a new setting for existing urban neighborhoods, which suddenly have many of the advantages of suburban communities.

John Gustavson

For the Record: Schuyler at the 1893 World's Fair

By Suzanne Stephens

Montgomery Schuyler's "Last Words About the World's Fair," published in THE ARCHITECTURAL RECORD in 1894, has often been considered the most perceptive critique of the Columbian World Exposition to be published at the time. Even among Schuyler's own work, this essay was judged "possibly the best thing he wrote," by William Jordy and Ralph Coe, who compiled Schuyler's criticism in *American Architecture and Other Writings of Montgomery Schuyler* in 1961.

Schuyler, a veteran newspaper journalist who had made architecture criticism a particular specialty, identified three attributes of the Fair, pertaining in particular to the Court of Honor, that were responsible for its "architectural triumph." These were unity, magnificence, and illusion. At the same time, Schuyler cautioned against using the Fair as a model to be imitated in further architecture and planning endeavors. This "festal" grouping of buildings, erected temporarily in a waterfront setting and landscaped by Frederick Law Olmsted and Henry Codman, should be seen, Schuyler urged, as a "stage set." To Schuyler, the Fair was not architecture. "The art of architecture is not to produce illusions or imitations, but realities, organisms like those of nature."

Suzanne Stephens is the editor of Oculus *and a regular contributor to* The New York Times. *For this article, she drew from the research and writings of William Jordy and Ralph Coe, John W. Thorn, Helene Lipstadt, Andrew Dolkart, and Dudley A. Lewis.*

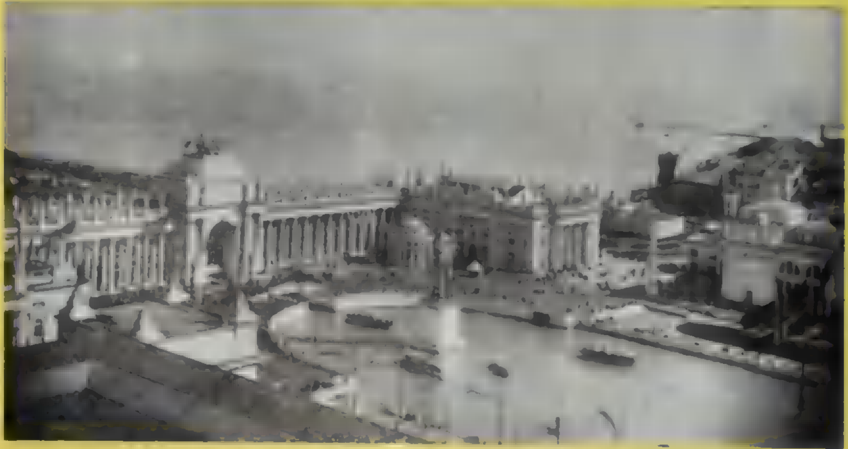
At first reading, it seems strange that Schuyler, who has come to be regarded as the premier proto-Modernist architecture critic of the period, would seem to actually approve of these Neoclassical concoctions. Or that he would look so benignly on their symmetrical disposition around the lavishly peristyled and porticoed basin of the Court of Honor. After all, Schuyler was singled out by both Frank Lloyd Wright ("In the Cause of Architecture II" published in RECORD in 1914) and Lewis Mumford (first in *Brown Decades* in 1931, then in *Roots of Contemporary Architecture* in 1952), for helping advance progressive ideals in architecture.

As Mumford put it in *Roots*, Schuyler "never hauled down the flag." Indeed Schuyler had initially criticized the choice of Neoclassical architecture at the Fair in an unsigned *New York Times* editorial since attributed to him. In the piece, written at the time of the Fair's dedication in October 1892 (still months away from the opening on May 1, 1893), Schuyler said about the architecture, "as a style it looks backward," calling it both "unmodern and undemocratic." Nevertheless in the same piece he allowed that the Fair was still a "very remarkable triumph for our democratic Republic."

Adjusting his earlier appraisal

During the next year, in which he wrote ove half a dozen pieces on the Fair for the *Time* as well as three articles for RECORD (including an anonymous "Architectural Aberrations" now attributed to him), Schuyler seemed to adjust his earlier appraisal of the Classical architecture of the so-called "Whit City." While he panned the Neoclassical U. S Government building by Willoughby J. Edbrooke as a "rude and crude and ignorant compilation of features" in his "Aberrations piece, Schuyler declared the Neoclassical extravaganzas of McKim Mead & White's Agriculture building and Charles Atwood's Palace of Fine Arts to be "beautiful."

In "Last Words" Schuyler pointed out that the choice of a Neoclassical architecture gave a strong unity to the ensemble, as did the common cornice line 60 feet in height, and the shared material—an amalgam of plaster and hemp called "staff,"—that coated the temporary wood and iron structures. In this summary piece, he explained that the Classical buildings also achieved a magnificence not just through the staggering dimensions (George B. Post's Manufactures and Liberal Arts Building was 1,687 by 787 feet), but by grace of the



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Bird's-eye view of Lagoon and Lake Michigan.

Looking southwest from Manufactures Building.

ne hundred years after the event, Suzanne Stephens re-examines hat architecture critic Montgomery Schuyler had to say about the hicago World's Fair when it first opened.

llared avenues" of the Neoclassical ar- les and colonnades that were associated h "the very beginnings of monumental hitecture." Indeed, the size of the Fair, bracing 633 acres, was three times that of Paris Exposition of 1889.

ile the Transportation Building, placed ay from the Court of Honor on Olmsted's turesquely conceived lagoon, was de- ned by Adler & Sullivan as a monumental rk, it didn't quite win Schuyler's complete probation. On one hand, Schuyler com- nded the architects for treating plaster hitecture as plaster, instead of trying to tate masonry. Yet Adler & Sullivan at- npted to "enliven" the plain expanses of ff by a color palette (basically red and or- ge) that Schuyler felt was "not cessful." Since the colors played such a jor role, the overall design suffered. uyler also observed that the huge 70-by- -foot Golden Doorway ended up being an olated fragment, entirely unrelated to the neral scheme."

gledy-piggledy planning

e State buildings also came under attack the critic, particularly in their planning. an article for RECORD, "State Buildings he World's Fair," Schuyler condemned ir clustered arrangement as "higgledy- gledy," where buildings were "strewn miscuously" around. Regarding their individual architectural treatments, he didn't condemn their historicist leanings per se. The particular approach to history was at issue. Schuyler felt the state buildings should reflect the history of the colonies and/or the region. McKim Mead & White's adaptation of the Villa Medici for the New York State pavilion might be quite fine by itself, but he would have preferred an adaptation of an historic house from Albany instead. California's Mission-style building designed by A. Page Brown, on the other hand, at least made an homage to the local color and character of architecture of that state. Even New Hampshire's building, designed by George B. Howe as a modified chalet, was not, according to Schuyler, "inappropriate." The German pavilion, another historicist building evaluated by Schuyler in *The New York Times*, was commended for using staff in an honest way, but dismissed as an overexuberant rehash of German architecture of the 15th and 16th centuries.

Exuberance at the Fair was allowable, of course, but in its proper place. And no place was as fitting as the Midway Plaisance. In a *New York Times* review Schuyler noted that "It is out here in the Midway Plaisance rather than in the White City itself, that the World's Fair and cosmopolis is to be found. For the civilized world, or Christendom as it used to be called, is too much of a muchness to offer much of an ethnic study." But ethnic study only went so far. A notorious hit of the Fair was belly dancing, a.k.a "the hootchy-kootchy." But it was too much for Schuyler: "The dancing at the Egyptian theatre is not describable, except by saying that it is disgracefully indecent." Schuyler urged that it be stopped. His other comments about the various ethnic exhibits in this entertainment district were more jocular in tone, but today would be described as racist.

The Fair as a stage set

With most of his commentaries on the Fair, Schuyler made it clear that the architecture and planning had to be judged on quite different terms than such efforts in the every day world. Indeed as he wrote in the "Aberrations" piece, "Here, as in stage setting, illusion is what is aimed at." Other critics missed this point, with possibly the exception of the European architects and historians. The European critics covering the Fair were divided roughly into two groups. Those who represented a general-interest audience often praised it highly. Some even marveled that Americans, known for their ugly, uncivilized cities, had it in them to come up with such a resplendent artifact. French writer Paul Bourget referred to the real landscape of Chicago he saw surrounding the Fair as "the black city." As for the European architects and architecture critics, they were much harsher in their assessments. They generally saw nothing new

nd Basin and South Canal: Agriculture Building, the onnade, and Machinery Hall.

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The U. S. Government Building, which Schuyler criticized in an "Architectural Aberrations" article.

there, only weak imitations of Beaux Arts classicism. The English historian Banister Fletcher, in fact, feared that American architecture, known for its inventiveness, would be set back by the Fair.

Generally the reaction to the Fair by the American critics, in both the popular and professional press, was favorable at the time it opened. It was only a few years later, when American architects and architecture critics, such as P. B. Wight and Claude Bragdon, began to lament the rapid embrace of Beaux Arts academicism by all of America, even in the home of Chicago School architecture, that the Fair began to be viewed in a dimmer light. By 1922, when Louis Sullivan denounced the "virus of the World's Fair" that caused the "violent outbreak of the Classic and the Renaissance," it seemed as if his words were indeed the last and truest ones. In spite of Schuyler's warnings of the dangers of careless imitation, the Fair's popularity had fostered the growth of Neoclassical public and commercial buildings anyway.

An esthetic filter

Schuyler's criteria for judging the Fair buildings—unity, magnificence, and illusion—so applicable to this ephemeral situation, were integral to a larger framework of values by which he evaluated architecture. His criticism was based on the belief in the honest and sincere expression of materials and building techniques, with design as an "organic" response to given conditions. He also examined each architectural response on its own terms. Yet these ideals were applied to the particular circumstances through a fundamentally esthetic filter. Traditional rules of proportion, scale, and harmony were basic to his evaluation, no matter whether Schuyler was criticizing Gothic Revival, Richardsonian Romanesque, Neoclassical, or proto-Modernist architecture. All such expressions still had to conform to the laws of the eye.

This approach to assessing architecture, from the point of view of the observer looking at buildings from the street, was not all that unusual at the time. Schuyler and others did not often address how the plans of the buildings affected the interior spaces or their functions. Nor was the perceptual and kinesthetic experience of space and light a major preoccupation of criticism at the time.

If Schuyler were to appear as a critic today, he would find more expected of his evaluations than the three criteria of unity, magnificence, and illusion, even for an ephemeral setting, would allow. He also might be perplexed to find that unity and coherence are no longer significant attributes of modern-day spectacles of a comparable nature. Instead images, often fragmentary, are collaged together. While the hotels at EuroDisney obey a height limit, the variegated "themes" do not stress unity, magnificence, or illusion. If anything they accept their fakeness with a cheery bravad

Schuyler would also be surprised to hear theorists today argue that unity is no long a viable goal of architecture. "Unity" is no just a component of what K. Michael Hays and others would call "bourgeois humanism." It is seen as a hopeless nostalgic dream of a *retardataire* value system tha implies a belief in the presence of a center coherent world where the observer (or "su ject") still has a solid footing. Without a "subject" being important, magnificence a illusion are simply irrelevant.

An unideological approach

Fortunately Schuyler doesn't have to deal with all the unresolved issues of the mode world. He's gone. But his bequest to criticism remains. Happily, it is not in the form of a few phrases or rules that one is supposed to apply *a priori* to each new situation. Rather his implicit credo is that evaluating architecture and urbanism requires one to look unideologically at the work and confront it directly on its own terms, at that moment. Next, one tries to clarify the criteria by which the work is to judged, and then attempt to communicate those final words to the audience. ■

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The Arch of Peristyle.

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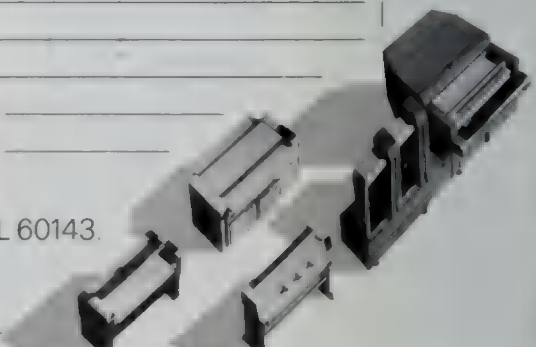

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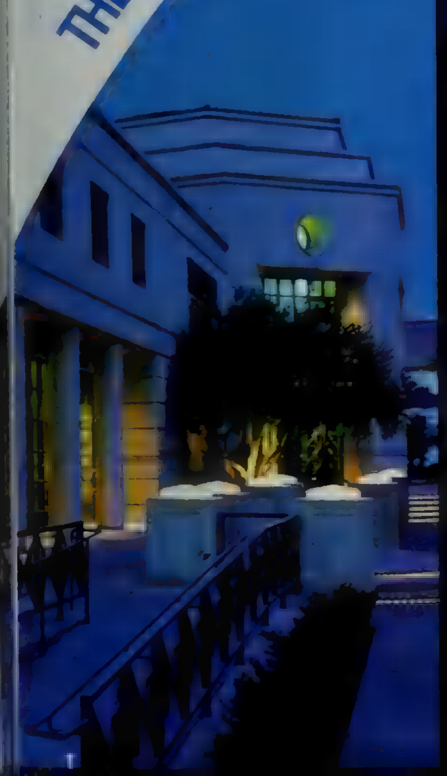
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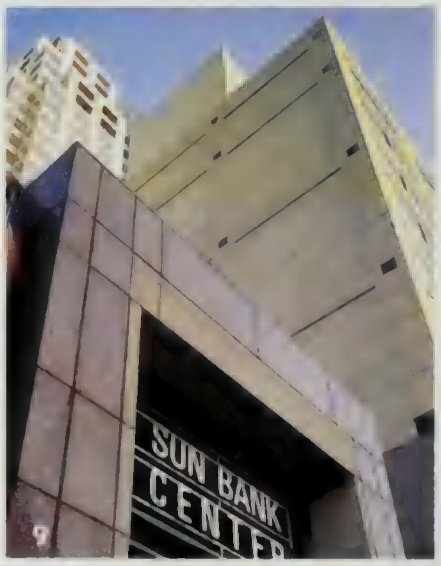
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8) Hobby International Airport • Bovay-McGinty, Inc., Houston, TX
9) Sun Bank • S.O.M. Architects, Washington, D.C. © Phil Spears
10) Orlando Museum of Art • Morris Architects, Orlando, FL
11) [illegible] Five • Walton, Madden, Cooper, Landover, MD
12) Embassy Suites Hotel • Doug Comstock, Colorado Springs, CO
13) [illegible] Elementary School • Dekker, Perrich & Associates, Albuquerque, NM

Design Flexibility

EIFS...Exterior Insulation and Finish Systems offer design opportunities limited only by the imagination. They allow the utilization of otherwise costly creative accents such as pediments, keystones, quoins, spandrels and reveals. The affordable design versatility achieved with EIFS is further enhanced by innumerable color and texture options and the ease with which the system functions in harmony with a wide spectrum of other building materials.

Insulation Qualities

EIFS eliminates thermal bridges and brings insulation to the outside of the building literally "wrapping it" to protect against the elements. Decades later, an EIFS building continues to provide heating and cooling savings to the building owner.

Field Applied or Panelized

The decision for field application or panelization will be determined by the size of the project, prevailing weather conditions and the urgency to close-in the building. Be assured, however, EIF systems, field applied or panelized, are "builder friendly." They install quickly easily providing additional savings.

Renovation or Retrofit

EIFS can revitalize a building at a most reasonable investment cost. Whether restoring a building to its former state or creating an updated contemporary look, EIFS offer the opportunity to meet the owner's requirements with almost no disruptions of ongoing business activities.

Durability

EIFS arrived on the North American continent from Europe in 1969. Today, there are thousands of structures that have been successfully designed with EIFS, both new and retrofit. These systems continue to grow in popularity because they are durable and provide cost-effective solutions to creative design challenges.

For more information on how to put quality assurance into your EIFS specification, look to the firms that display this logo.

EIMA

EIFS Industry Members Association

The Symbol of Quality and Dependability

When you specify an EIFS or you want to know more about Exterior Insulation and Finish Systems, first look for the EIMA logo.

It's your assurance of the highest professional standards of product and service.

The manufacturers listed are the foundation of the EIFS Industry Members Association. But, as our name implies, the membership includes a much broader base. There are applicator/contractors who are dedicated to quality workmanship, distributors who provide technical expertise and dependable service as well as suppliers whose products meet the association's high standards. Industry consultants and regional trade associations complete our membership.

The membership is dedicated to building and maintaining quality and product dependability. At the same time, we foster state-of-the-art training standards and procedures as well as provide educational tools to improve the capabilities and performance of applicator/contractors.

We are EIMA! We represent an industry which today generates approximately 200,000,000 feet of wall surface annually. We consider this an important and meaningful trust. Our mission is to make the EIFS industry even more responsive to the needs of designers and building owners in the next century.

For information about EIFS construction or our association, contact
EIFS Industry Members Association
2759 State Road 580, Suite 112
Clearwater, Florida 34621-3350
Phone 813-726-6477 FAX 813-726-8180

Dryvit Systems, Inc.
FINESTONE
Parex, Incorporated
Pleko Products, Inc.
Senergy Inc.
Sto Corp.
Thoro System Products

N. Manatee Health Center • Jerry N. Zoller, Bradenton, FL

This insert is designed so it will easily pull out for reference and filing.

EIFS Industry Members Association

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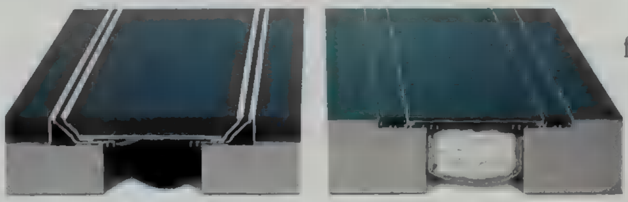
Printed in U.S.A. 5-93

NOT EVERYTHING CAN BE HIDDEN AS EASILY AS C/S SEISMIC JOINTS.

Concealing old fashioned seismic joints is sort of like trying to hide an elephant with a tablecloth. But now C/S offers a dramatic breakthrough which enables both exterior and interior seismic joints to be completely "undercover".

What's the catch? There's none! Both systems employ minimally visible gaskets for moderate movement along with recessed center plates to accept a variety of exterior and interior materials — from granite to linoleum. And should seismic accommodation be necessary, vast additional expansion capability pops into action. After cycling, patented systems allow center plates to easily return to flush position.



For information on the first, low visibility exterior and interior seismic system, call 1-800-233-8493.

THE C/S GROUP

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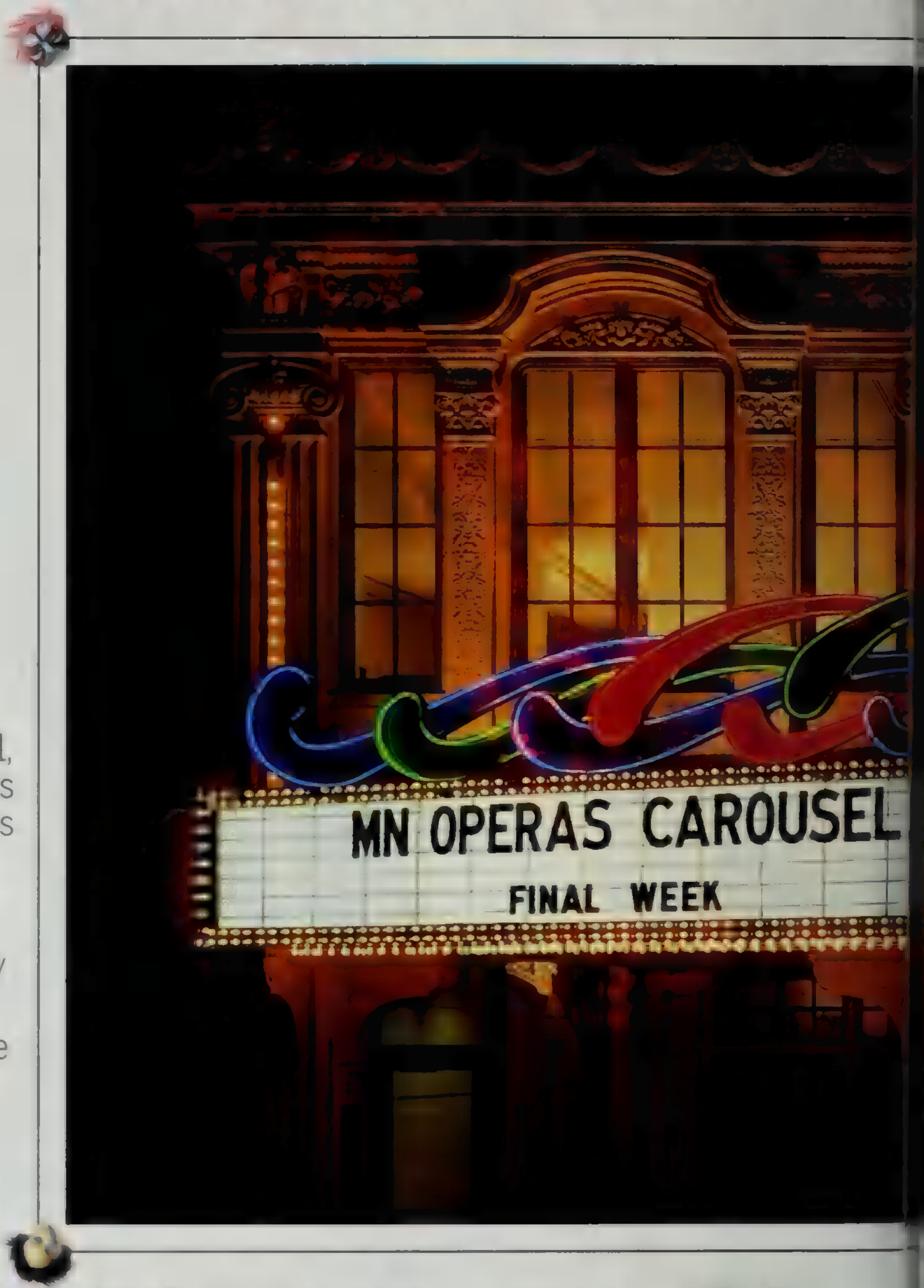
THEY DON'T MAKE THEATRES LIKE THIS ANYMORE. WHICH IS WHY TH



When it opened in 1921, the State Theatre in Minneapolis was hailed as the most luxurious showplace between New York and San Francisco. Sixty years later however, when planning began for a $130 million office/retail complex for the site, it appeared this grand old theatre would go the way of the silent films it once screened.

But in 1985, a determined group of preservationists succeeded in getting the State placed on the National Register of Historic Places. And one of the first companies to become involved in its restoration was Marvin Windows and Doors.

You see, the windows above the theatre's marquee posed a two-sided problem. Not only would they have to fit perfectly and look exactly like the originals, they'd also have to be durable and maintenance-free. And Marvin was the only manufacturer willing to make these unique windows and stand behind them.

And so, working from measurements of the existing openings, Marvin built the 3'x 10' windows and 6'x 10' double-width units with custom divided lites and the same gently rounded frames as the originals. In addition, each window received a commercial grade exterior finish in a color that matched the look and style of the building.

As a result, the State got windows that look like the originals but actually feature the newest ideas in design, craftsmanship and energy efficiency. And Marvin got the opportunity to prove once again that responsiveness

KED US TO MAKE THE WINDOWS.

d flexibility are as much a part of every window
d door they build as wood and glass.

Today, more than 70 years after it first opened
doors, the State Theatre has reopened as the
tering star of the Twin Cities' cultural scene. And
se who've seen it agree that everyone involved in its
toration deserves to take a bow.

MAKE US YOUR FIRST CALL, NOT YOUR LAST RESORT.

If you have a request for a special window or a problem you
can't solve, call the one company you know will have the perfect
ution. Call Marvin Windows and Doors at **1-800-346-5128**
00-263-6161 in Canada). Or mail the coupon for a free catalog
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__ Commercial Catalog

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JoAnne McDowell On Reuse

"There's an abundance of merchandise sitting around. Discontinued items from manufacturers. Hotel furnishings that are replaced after only a few years. We set up a hotline that enables designers to recycle these materials for community service projects. The end result offers efficiency that everyone benefits from. A society is only as good as its weakest link." JoAnne McDowell, ASID. Founder of Philanthropy by Design. Specifier of DuPont ANTRON® carpet fiber.

For more information on reuse for design and the Carpet Reclamation Project from DuPont, call 1-800-4DUPONT.

DUPONT ANTRON® NYLON

DUPONT

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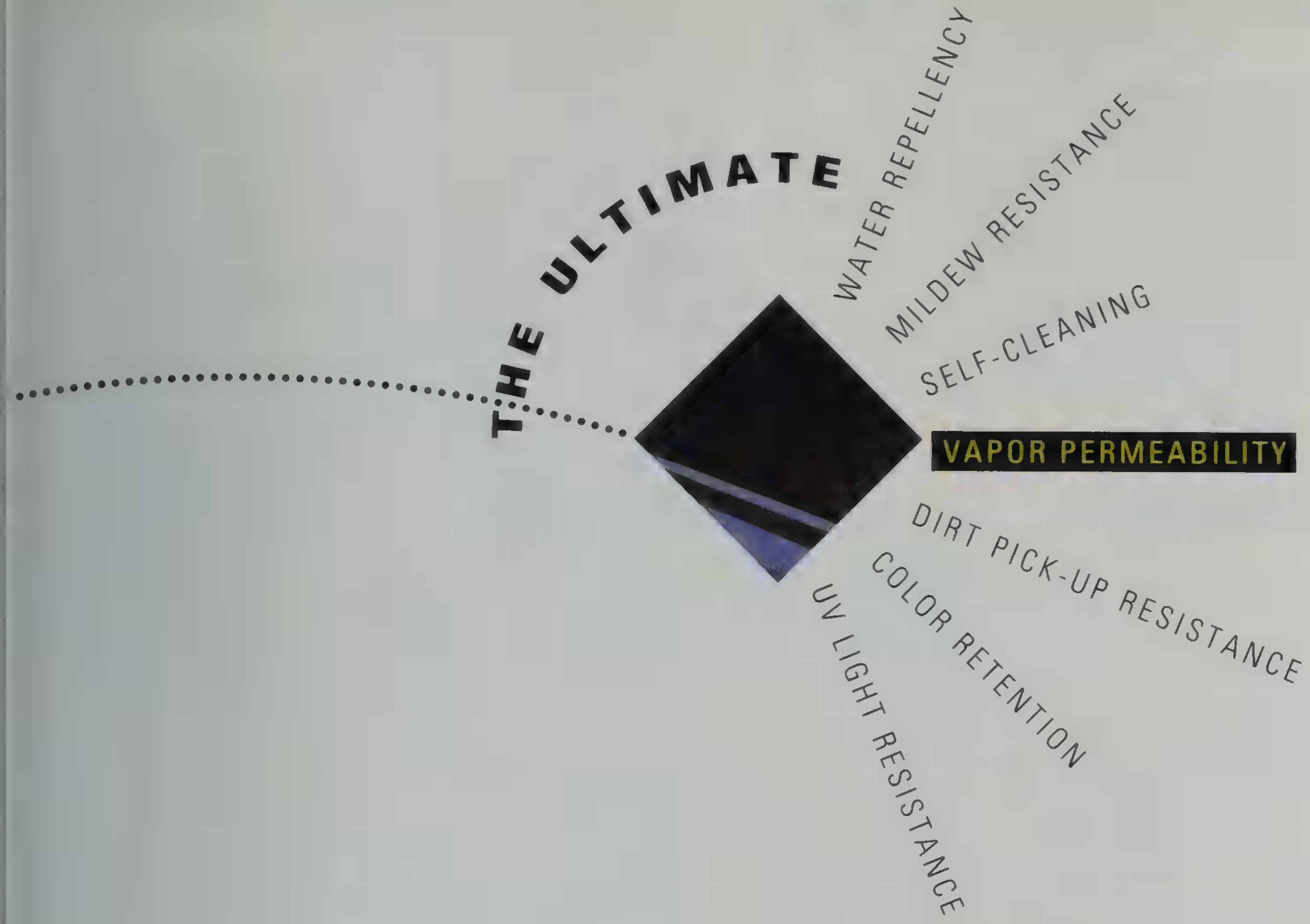
Ontario Association of Architects Headquarters Toronto, Ontario Rob Lawlor Architect Photography by Steven Evans

StoSilco® Technology. Science in action and only from Sto.



StoSilco® Lit.

More advances per square foot than in the last thirty years of EIFS finishes.

It's easy to make extraordinary claims about new product technology. It's usually harder to back them up. But when there's a true innovation, its performance will speak for itself. A case in point... StoSilco Lit. The EIFS finish coat that utilizes Sto's silicone technology.

You simply cannot buy an EIFS finish like this from anyone else. Water can't penetrate it. Dirt will not stick to it. Mildew won't grow on it. Rain washes it clean. Vapor permeates through its multitude of pores. Colors remain stable, bright and beautiful. In short, your building will look like new for years to come.

While these may sound like exaggerated claims, we've got the test results and product demonstrations that let StoSilco Lit speak for itself. And with over 10,000,000 sq. ft. sold in just the past year, it seems that a lot of people are listening.

So on your next project, combine the ultimate finish with any one of our Sto EIF Systems and judge performance for yourself.

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sto®

Sto Industries
Atlanta, GA, Tel: 800-221-2397
A division of Sto Corp.,
the Systems Technology Organization

Announcing Our Closing

Controlled By The Cookson Sure Fire™ System.

This new, state-of-the-art rolling fire door protection system utilizes a voice module and warning lights to announce that an alarm situation is occurring and the fire doors will be closing.

To learn more about the many features of the Sure Fire System and the rest of our fire door products, FAX your business card or name and address on your firm's letterhead to receive a FREE copy of the Cookson Fire Door Product Systems educational video.

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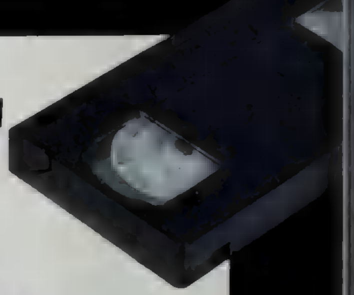

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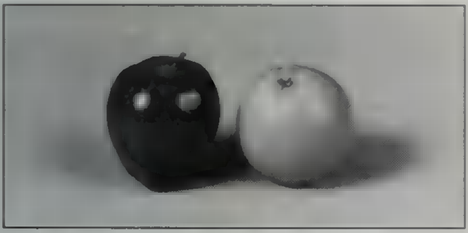
YOUR OPTIONS IN FIRE-RATED GLAZING

Sometimes,
it helps to know what you're comparing…

When you compare fire-rated glazing, things can get a little confusing. The ratings, the cost, the advantages… with no two products alike, it is difficult to know what to think.



At Technical Glass Products, we believe you should have the facts, so you can make a wise choice. The chart below shows how the main types of fire-rated glazing compare in six critical categories.

The use of any glass in a fire-rated area is regulated by code requirements (local or national) as interpreted by the local authority having jurisdiction. In North America, to be an "approved" fire-rated product for 30 minutes or longer includes a two step qualification as follows:

1. **FIRE:** The glazing product, in a frame, is subjected to intense heat which begins at room temperature and climbs to 1638°F. for a 45 minute rating; 1700°F. for a 60 minute rating; and 1925°F. for a three hour rating.

2. **HOSE STREAM:** Immediately after completion of the "fire" test, the still hot material is drenched with water from a fire hose. The water pressure at the base of the nozzle is 30 pounds per sq. inch for up to a 90 minute rating and 45 pounds per sq. inch for a three hour rating.

Glass tested for 30 minutes or less does not include the hose stream test…

Category	FireLite®	FireLite Plus	Wire Glass	Contraflam	Pyroswiss
Maximum fire rating (in min.) for glass larger than 100 sq. in.	60	60	45	90	30
Fits in standard fire-rated frames	✔	✔	✔	No	✔
Safety-rated	No	✔	✔	✔	✔
Visually clear during fire	✔	✔	✔	No	✔
Short lead times	✔	✔	✔	No	No
Passes hose stream test	✔	✔	✔	✔	No

Caution: Glass tested for 30 minutes or less does not include the hose stream test and, if subjected to water (such [illegible] from sprinklers or extinguishers), may collapse within minutes.

More Facts On
Fire-Rated Glazing…

Having trouble remembering which product is which? Here is a brief summary of the primary characteristics that define each form of glazing.

FireLite:

FireLite looks, cuts and feels like regular window glass but will not break when cooled rapidly. Since FireLite is a ceramic, it has an extremely low coefficient of expansion which provides this durable characteristic. In addition, its thickness of only 3/16" allows it to be glazed into standard fire-rated frames. FireLite is approved for use in fire-rated doors, windows, sidelites, transoms and borrowed lite frames. FireLite is listed with Warnock Hersey International (WHI) and Underwriters Laboratories (UL), for 45 minutes in sizes to 3,325 sq. inches, 60 minutes in sizes to 2,721 sq. inches and 3 hours in sizes to 100 sq. inches (as approved by local authorities having jurisdiction).

FireLite Plus:

In certain situations, building officials may request a glazing product that offers both a fire rating and an impact safety rating. Just recently introduced, FireLite Plus is fully compliant with ANSI Z97.1 and 16 CFR 1201 (Category I). Clear and wireless, it carries a 60 minute fire-rated listing with UL and fits in standard fire-rated frames. Call Technical Glass Products for the latest details.

Wire Glass:

Wire glass has been the traditional choice for fire-rated glazing over the years. The wires can create a more "institutional" look and feel, but for fire-rated locations where aesthetic appearance is not a major concern, wire glass offers an inexpensive option. Listed with both UL and WHI, it carries a 45 minute fire rating for sizes up to 1,296 sq. inches, and meets the safety requirements of ANSI Z97.1, but not 16 CFR 1201.

Contraflam:

Contraflam has achieved both a fire and a safety rating. It is an insulated glass unit consisting of 2 or 3 layers of tempered glass with a heat absorbing "gel" between layers. The finished glass units may require special framing since this design results in very thick panels (for a 45 minute rating, the unit is 1-5/8" thick). The system can be heavy (approx. 14 lbs. per sq. ft.), expensive, and generally requires special handling. In addition, since each unit must be made to size in Europe, lead time may be 8-10 weeks or longer. During a fire, the gel between the glass lites turns white, obscuring vision but reducing radiant heat.

Pyroswiss:

Pyroswiss is a tempered fire-protective glass from Europe. It has passed the UL and WHI testing for a ***maximum*** of 30 minutes. **Pyroswiss does not meet rating requirements of 45 minutes or longer because it cannot withstand the hose stream testing.** Typically, lead time for custom orders of Pyroswiss is approximately 8-10 weeks (some sizes may require less lead time).

We hope this information is helpful. If you have additional questions on a specific project, feel free to give us a call. We would be happy to help you decide which fire-rated glazing is right for you.

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Fax: 1-800-451-9857

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UNA·CLAD

ltiple Solutions for the Designer

JOB NAME: Medical Arts [illegible] Building, Brooklyn Park, MN
ARCHITECT: Bernard Herman Associates, Inc., Minneapolis, MN
GENERAL CONTRACTOR: Benson Orth, Minneapolis, MN
CONTRACTOR: Armetex, Inc., Maple Grove, MN
MATERIALS: 1" UNA-CORE Honeycomb Series 10 Panels with a Clear Anodized Finish

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tom Architectural Metal Systems

Visit us at Booth 461/463 at the CSI Show in Houston

FLEXIBILITY

We will meet your project design needs for **flat, bent, curved or compound shapes**, with **eight different UNA-CLAD panel systems.** Gasketed joint design and exposed sealant systems are available. Panels are fabricated from **monolithic sheets or composites** with a thermoplastic or honeycomb core. Finishes include anodized and painted aluminum, polished stainless steel and polished muntz metal.

QUALITY

Every UNA-CLAD panel is **custom fabricated for a precision fit.** Computer Aided Design and Computer Aided Manufacturing assure close tolerance and efficient manufacturing of every system component. **Close attention is given to flatness, weather resistance and durablility** for every unit we produce.

RELIABILITY

Each facet of our business has been built in response to market needs for quality, cost effective products. Through our **panel systems, metal roofing systems, column covers and architectural flat sheet metal programs** we have continued to expand by innovation, design and state-of-the-art production methods.

SERVICE

Our professional representatives are located throughout the nation. They will provide you with an immediate link to obtain **design and detail assistance, budget studies and specification guidance.**

RELATED PRODUCTS

Our UNA-CLAD panel systems are complemented by our **column cover and metal roofing systems.** We are also a major source for **pre-finished and pre-polished architectural metal sheets.**

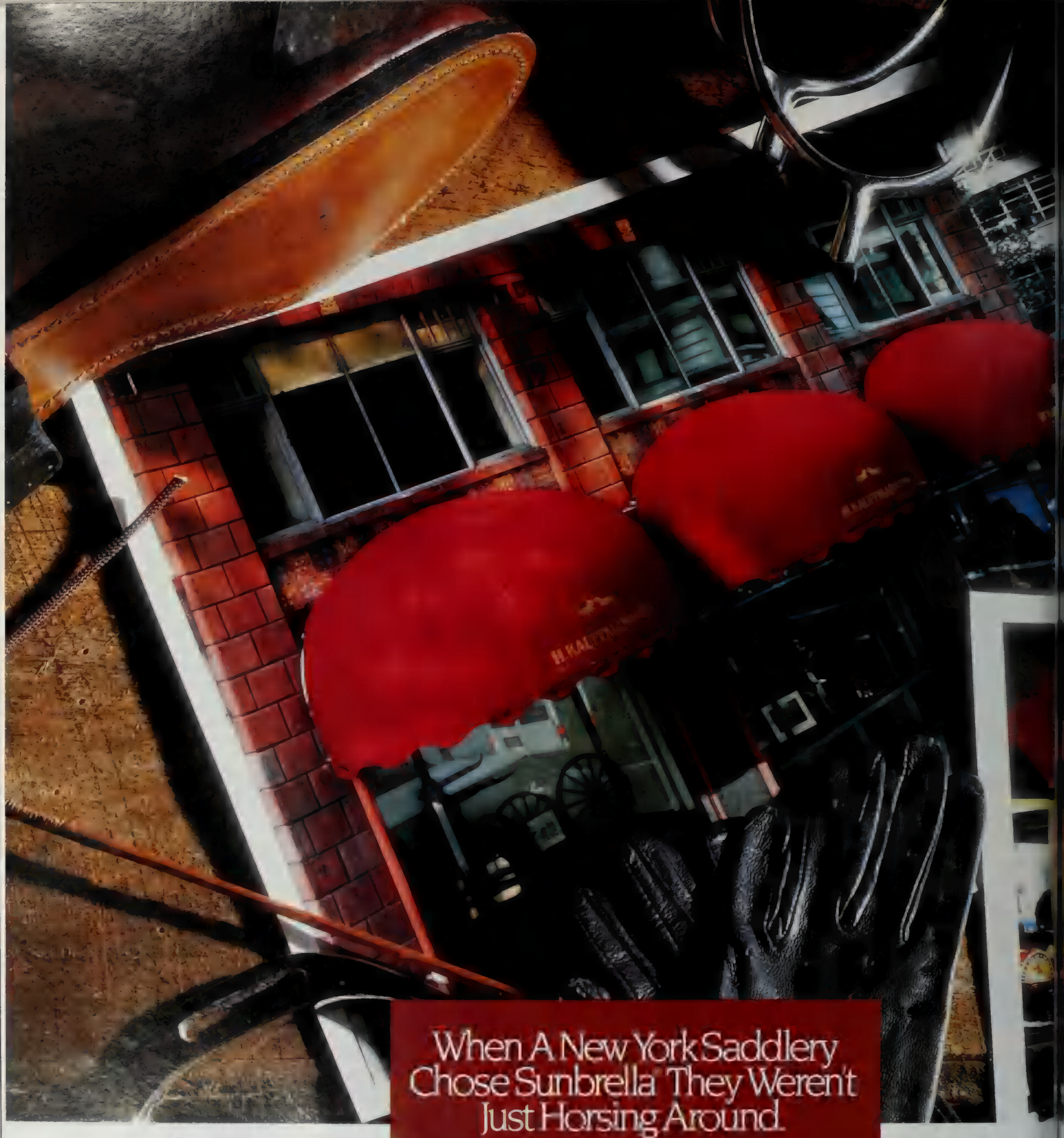
See us in Sweets:
Panels — 07420/COP
Roofing — 07610/COP
Columns — 05600/COP

Circle inquiry card, or if you are in a hurry call toll free

COPPER SALES, INC.

UNA·CLAD

800 426 7737



When A New York Saddlery Chose Sunbrella® They Weren't Just Horsing Around.

Not just any fabric would do for H. Kauffman & S

Saddlery Company. They needed something that was versatile, beautiful and durable. Sunbrella solution-dyed acrylic fabric a

Sunbrella Firesist® fabric are all those things.

The versatility of our fabric is evident all over the store. Inside and out creative uses of the fabric abound: in the beautiful awni

to grace the outside, in the canopies hanging over the showroom, in the door and window treatments, in the many accent pie

The beauty of Sunbrella shines through in every Sunbrella fabric we offer. Regular Sunbrella is available in over 90 colors and st

nbrella Firesist is available in 21. The durability is reflected in the best five-year limited warranty in the industry. Sunbrella its solution-dyed colorfastness and strength for years, and resists mold and mildew. And Sunbrella Firesist meets the ments of the National Fire Protection Association and the California Fire Marshal's test.

heck the Yellow Pages under "Awnings and Canopies" for the name of a dealer near you.

art designing with and specifying Sunbrella, because uldn't want to horse around with anything else.

Sunbrella Firesist®

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Glen Raven Mills, Inc., Glen Raven, NC 27217
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The new name for Goodyear's Roofing Systems.

Same great people.
Same great products.
Brand new name.

A great new era in roofing is about to begin. With a heightened commitment to the industry through our Authorized Contractors and Full Service Distributors, Versico proudly carries on the legacy of excellence established in roofing by Goodyear.

The same people who created innovative, durable roofing systems such as Versiweld™ and Versigard® will continue to provide these roofing systems and other high quality roofing products.

The already high level of service you've come to expect from us will be raised even higher under the Versico banner. In fact, we intend to improve every single aspect of our business.

We're innovative. We're dedicated. We're Versico. We may be a new name in the business, but it's a name that's synonymous with the Best in Professional Roofing.

VERSICO
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A subsidiary of Carlisle Corporation.
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1-800-992-7663

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Not Skin Deep

Color tones may vary. Color samples available through Celotex representatives.

Everest. The cast ceiling panel that gives you color clear through.

What we have shown here is a ceiling panel that is so characteristically stone-like, that it can be cut precisely.

This demonstrates the strength and durability that only a cast product provides, but it also illustrates another virtue in Everest cast. Designers can choose from a palette of over 75 colors to integrate the ceiling plane with the total interior environment. But what's more, the colors are not superficial. They're integral to assure a lasting beauty.

Compared to conventional ceiling panels, Everest takes four times longer to make. They are poured like cake batter into individual trays, and cured in an oven. The result is a ceiling panel for premiere projects with unique quality impossible to equal in any other way. For enduring strength and lasting beauty, Everest cast removes the ceiling on creativity.

Celotex

THE FIRST NAME IN CEILINGS
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The Rodin Museum gift of Jules E. Mastbaum

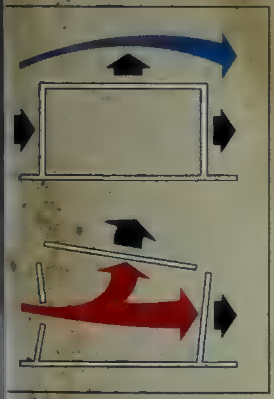
CAST LASTS.™

IF YOU NEED A REASON TO SPECIFY LAMINATED GLASS, CONSIDER FOR A MOMENT THE COCONUT.

In a hurricane, it can look less like a coconut and more like a cannonball. Which is a very good reason to specify laminated glass with Saflex® plastic interlayer.

For starters, tests show it can withstand hurricane-force winds (that's no small feat in and of itself).

More importantly, if a hurricane hurls a coconut at your building, laminated glass could help protect against a barrage of problems. That's because the glass tends to remain intact if broken, adhering to the interlayer. This reduces the possibility of flying shards that can injure people and destroy interiors.



ole in the building could cause change in internal pressure nd lead to structural failure.

And since the glass tends to remain in the opening, it can protect the interior from wind-blown debris and water damage as the storm rages on. Plus, the building envelope remains intact, protecting against a change in internal pressure which could cause structural failure.

But that's just half the story. Laminated glass is as beautiful as it is tough. Its structural qualities and color choices give architects design freedom.

For example, you could design a glass structure in the shape and color of a coconut (hey, you never know).

Laminated glass meets the toughest building codes. It provides added security. Helps control noise. And protects against solar heat gain and damaging UV radiation.

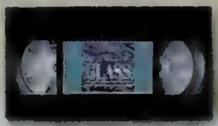
Laminated glass helps protect The Enclave in Naples, Florida from hurricane-force winds.

For more information, call us at 1-800-24-TOUGH. Or write Monsanto, Dept. 204, 800 N. Lindbergh Blvd., St. Louis, MO 63167.

We'll show you how laminated glass can take just about anything you throw at it. Even a coconut.

Please send me more information on laminated architectural glass.

Name________________________________
Title________________________________
Company_____________________________
Address_____________________________
City__________ State______ Zip_____
Telephone___________________________



MONA-0001 AR

Saflex®
Plastic Interlayer
By Monsanto

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Inspiration.

Considering the 10,001 details you have to worry about in designing and building a project, the least we can do is simplify part of the process. If you're looking for a wall material that will both inspire you and withstand the tests of time and nature, you're looking for the Millennium Collection from Stark Ceramics. For complete details, send for your free Millennium portfolio and information guide and see how several companies like Murphy/Jahn have taken projects from sketches to structures with Stark's Millennium Collection.

Stark, P.O. Box 8880, Canton, OH 44711

Execution.

stark

[illegible] 0662

[illegible] card

"Your Wood I Beam™ is going to allow me unsupported spans up to how many feet?"

G-P: Wood I Beam joists have more load-bearing and spanning capabilities than dimensional lumber, so you can design with up to 48′ spans.*.

YOU: *...without cluttering up open space with support columns. It'd be ideal for a great room, a bonus room over a garage, a finished basement.*

G-P: Speaking of basements, Wood I Beams allow higher ceilings because you can pass utilities and duct work through the beams.

YOU: *What about floors? Does it help avoid squeaks?*

G-P: Absolutely. G-P Wood I Beams are built to resist the warping and twisting that create those squeaks.

YOU: *Will I be able to use Wood I Beams if I spec conventional lumber in the flooring system too?*

G-P: Yes–G-P Wood I Beams are compatible with standard dimensional lumber sizes. And you can get long lengths, even up to 60,′ for just about any design you can dream up.

YOU: *Of course, I wouldn't know how to design with it after using dimensional lumber for 15 years...*

G-P: We'll help with that, and we can do take-offs for you.

YOU: *Well, anything that expands my design options solves some big problems for me.*

G-P: So–no more questions? Come on, I'm just getting warmed up...

For more information about G-P Wood I Beam joists and headers, call 1-800-BUILD G-P (284-5347), Operator 720. (Ask about G-P Lam® laminated veneer lumber, too.) Or check Sweets Section 06190/GEO.

Solve it with G-P.℠

Georgia-Pacific

*Depending on space, loading and beam size.
"Wood I Beam" is a trademark, "Solve it with G-P." is a service mark and "G-P Lam" is a registered trademark of Georgia-Pacific Corporation. ©1993 Georgia-Pacific Corporation. All rights reserved.

Circle 25 on inquiry card

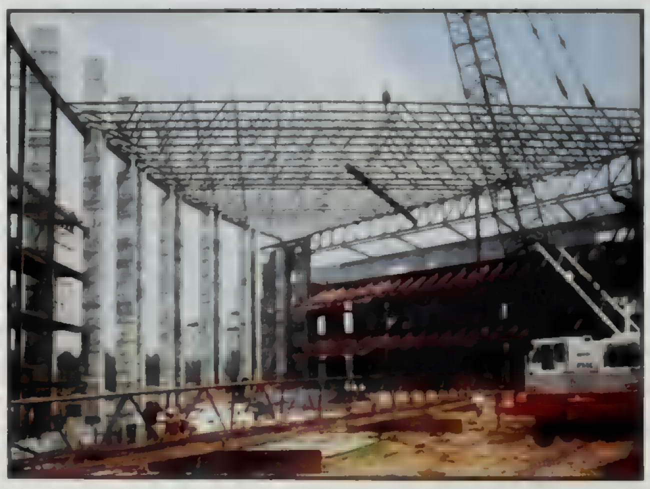
Steel Joists Make It Easier To Build Well For Less

To make building design more efficient, the Steel Joist Institute has provided three new tools: a computer diskette to determine vibration characteristics, the SJI 60-Year Steel Joist Manual, and a Catalogue of Standard Specifications and Load Tables.

The Steel Joist Institute (SJI) has created a computer program to assist the qualified professional engineer in determining probable vibration characteristics of floor systems using open web steel joists. This program is designed for use in conjunction with the institute's Technical Digest #5 "Vibration of Steel Joist-Concrete Slab Floors."

This program allows the designer to calculate swiftly and easily the frequency and amplitude resulting from transient vibration caused by human activity on a joist-concrete floor. The "what if?" scenario—variations in slab thickness, concrete strength, joist size, joist spacing, floor decking, live and dead loads, span lengths—can be accomplished in seconds.

The program is user friendly, can handle spans up to 100 ft. and can accomplish in seconds calculations that previously required several hours. It is available on 5¼ and 3½-in. disks and is IBM PC compatible. A comprehensive user's manual is included.



Long-span joists provide broad, column-free expanses like the sanctuary of this Charlotte, N.C., church.

The SJI 60-Year Steel Joist Manual is also now available. The new, 318-page 60-Year Manual replaces the 50-Year Digest and features 98 more pages of information. The practical section in the Manual is designed to aid the professional by listing four helpful categories:

- The various building documents required and what use they can be.
- Building site information and equipment needed.
- Step-by-step investigative procedures.
- Time-saving data for use when analyzing existing structures.

Another helpful reference that's now available is the SJI 1992 Catalogue o Specifications and Load Tables. All of the 1992 revisions are prominently listed sc that specifiers can review these changes quickly and easily.

The section of fire-resistive assem blies has been expanded and completel revised. It lists the requisite criteria fo using K-series joists in an assembly anc includes a simple, five-step procedure fo selecting the proper and most economi cal joist. In addition, the catalogu contains over 75 floor and roof assem blies listed in an easy to use chart fo quick reference, with specific UL designa tions for fire ratings from one to four hours

Last year, Underwriters Laboratories Inc. increased the allowable design stres of fire-rated steel joists by 36% for floor and 18% for roofs. The allowable tensil stress of joists used in most fire-rate assemblies has been increased to 30,00 psi for floors and 26,000 psi for roofs, a compared with the previous maximur stress level of 22,000 psi. The new star dards now make it more economical t achieve desired fire resistance rating without added expense for heavier joists

For information contact the Steel Jois Institute, 1205 48th Ave. North, Myrtl Beach, SC 29577.

Steel Joist Institute Members:

Canam Steel Corp.
Delong's Inc.
East Coast Steel
Gooder-Henrichsen
John W. Hancock, Jr., Inc.
The New Columbia Joist Co.
Owen Joist Corp.
Quincy Joist Co.
SMI Joist Co.—A Commercial Metals C
Socar Inc.
Valley Joist Div./EBSCO Industries
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Steel joists, steel girders and steel dec make shopping center construction fast and economical.

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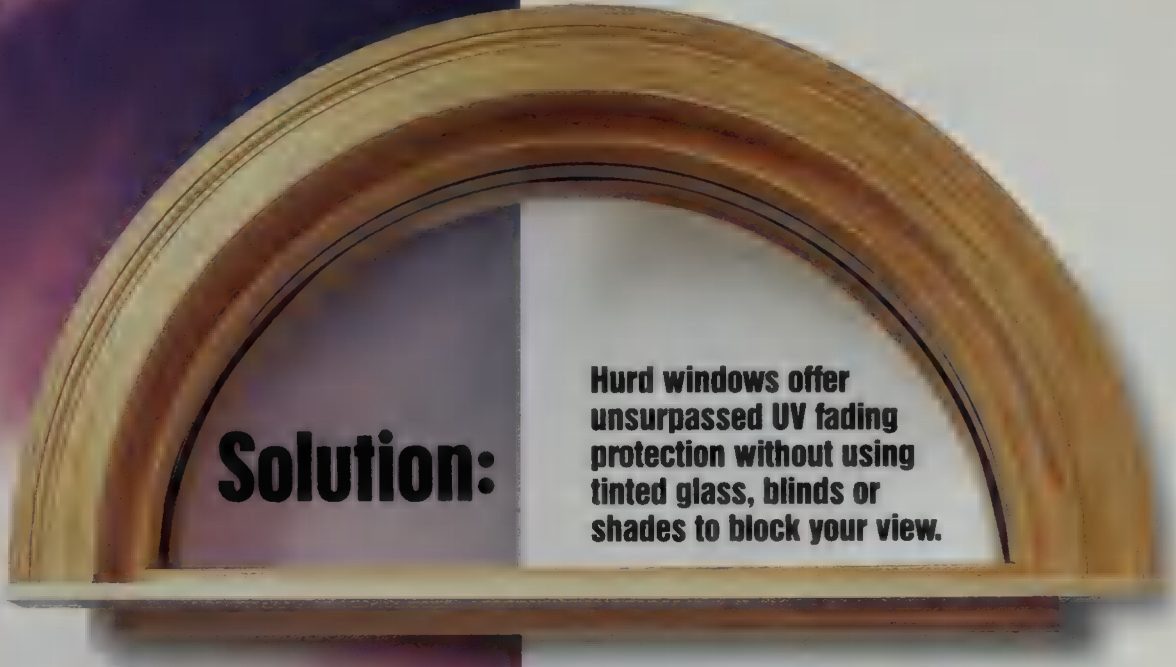

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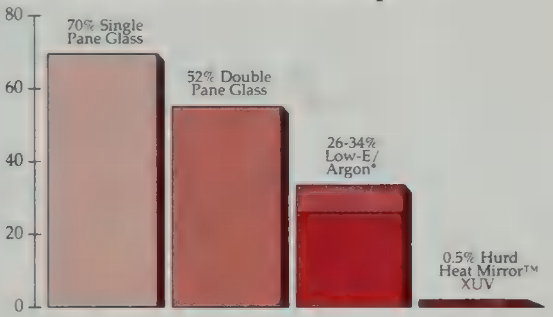

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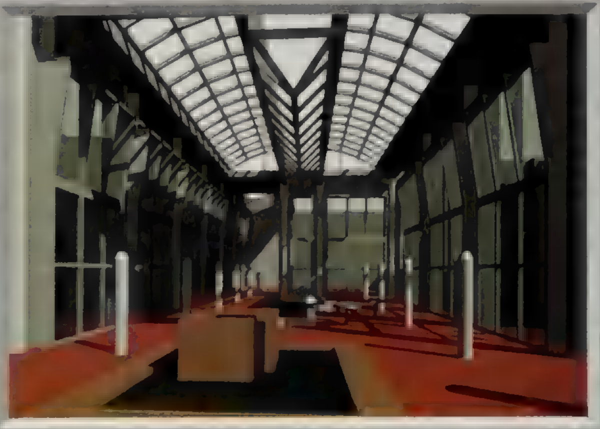
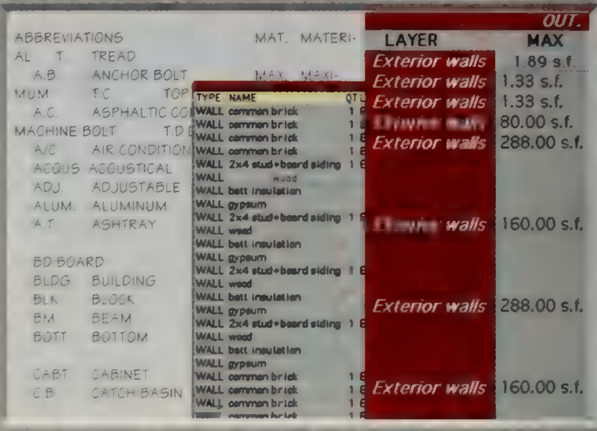


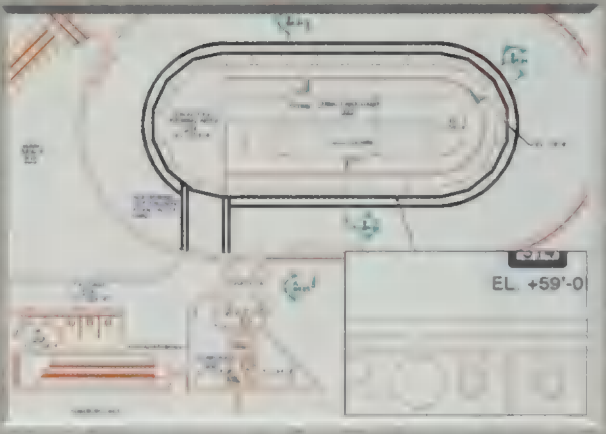


ABBREVIATIONS MAT. MATERI-
AL T. TREAD
A.B. ANCHOR BOLT MAX. MAXI-
MUM T.C. TOP
A.C. ASPHALTIC CO
MACHINE BOLT T.D.
A/C AIR CONDITION
ACOUS ACOUSTICAL
ADJ. ADJUSTABLE
ALUM. ALUMINUM
A.T. ASHTRAY
BD BOARD
BLDG BUILDING
BLK BLOCK
BM BEAM
BOTT BOTTOM
CABT. CABINET
C.B. CATCH BASIN

TYPE NAME QT
WALL common brick 1
WALL common brick 1
WALL common brick 1
WALL common brick 1
WALL 2x4 stud+board siding 1
WALL wood
WALL batt insulation
WALL gypsum
WALL 2x4 stud+board siding 1
WALL wood
WALL batt insulation
WALL gypsum
WALL 2x4 stud+board siding 1
WALL wood
WALL batt insulation
WALL gypsum
WALL 2x4 stud+board siding 1
WALL wood
WALL batt insulation
WALL gypsum
WALL common brick 1
WALL common brick 1
WALL common brick 1

OUT.

LAYER	MAX
Exterior walls	1.89 s.f.
Exterior walls	1.33 s.f.
Exterior walls	1.33 s.f.
Exterior walls	80.00 s.f.
Exterior walls	288.00 s.f.
Exterior walls	160.00 s.f.
Exterior walls	288.00 s.f.
Exterior walls	160.00 s.f.



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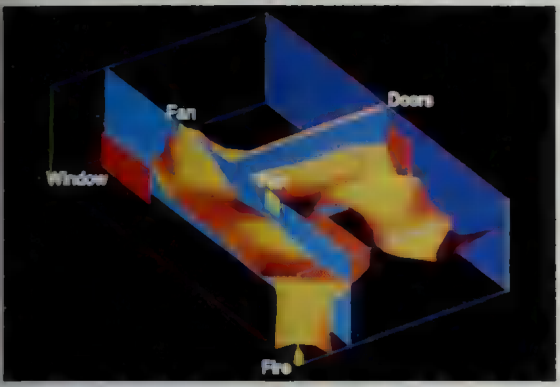
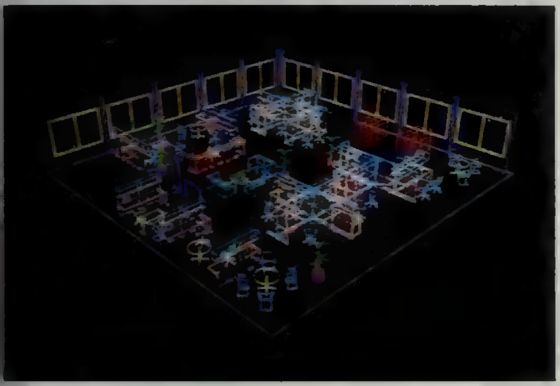
Circle 30 on inquiry card

Computerizing the Office



FLAIR simulates circulation of air and pollutants in a building.



The wireless-frame image (1) grew out of a 2-D AutoCAD floor plan. It was rendered in 3-D Studio and saved in Adobe Photoshop to produce image at right (2). Note the video-captured landscape through the windows in the more detailed closeup above (3).

Last year Columbia University, where I teach, hosted an exhibition of architectural drawings. The examples, spanning about half a millennium, showed a clean, stately progression from the work of Italian masters. Their art helped the designer design, helped the client and whatever government regulators who were around visualize the final product, and helped the builders put it all together.

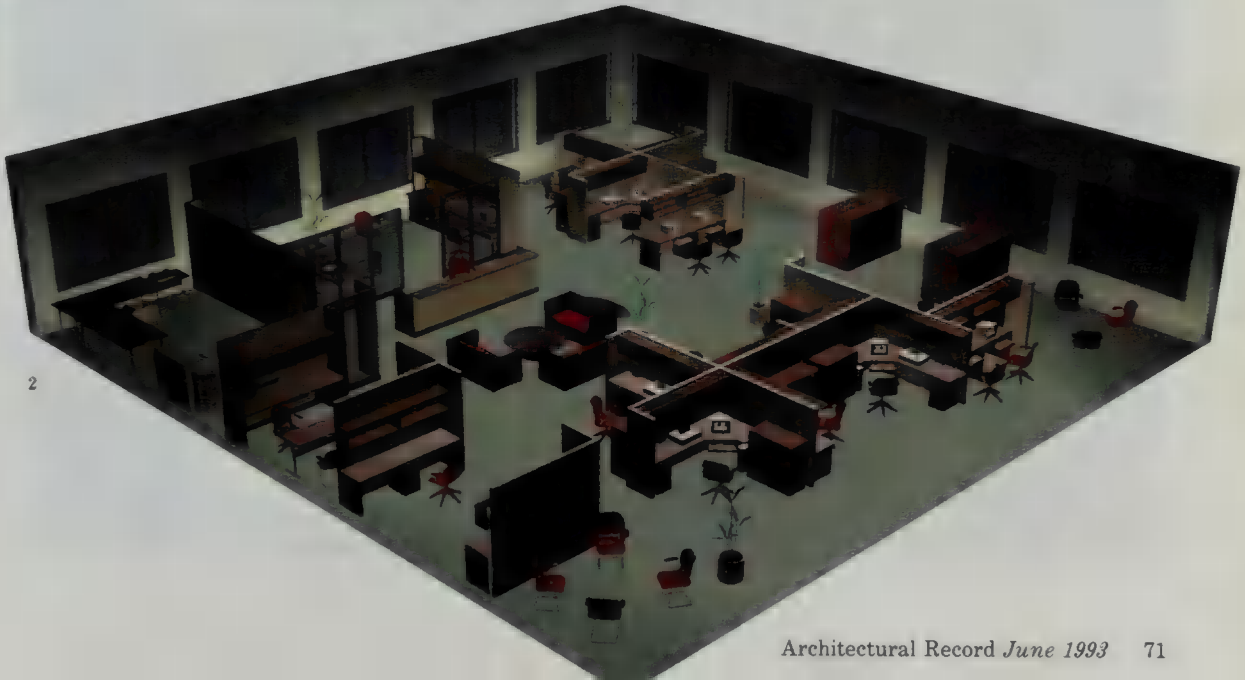
The past few years have seen the development of technology that has the potential for moving architectural design and drafting further than at any time in the past 400. We can now rough out a design in three dimensions, test it for shadows and light, color and bulk, circulation and energy consumption. We can walk through a design, firm up a part of it, do the hard-line drafting, and modify at will. We can track possible costs, and correspond software with suppliers' computers. The software can even check our work as it progresses. Does it meet local codes? Targets for first cost? Life-cycle cost? Potential construction schedules? Are there incompatibilities between the windows you want and the exterior wall panels?

Although we *can* do all this, technically, we can't do it on a regular basis. The reason: You can only get out of a drawing what you put into it. Either your office does it by building expertise and adding to libraries of details, or product vendors provide the expertise with computerized catalogs. In fact, both are happening.

By the end of the decade, there will be a wide gap between those who have computerized correctly—from top to bottom in their organization—and those who still maintain an artificial separation between design and production drafting.

The people who sell software and hardware are trying to make it easy for you. As of this year, all major CAD software running on DOS, UNIX, and Macintosh will share more or less automatic file translation. Over the next few years, much of the expected increase in computer power will go into ease of use—software will train you as you use it, and even suggest alternative ways of doing specific tasks.

Most importantly, different software and hardware vendors have different views of how different architects want to work on different projects. Thus, they will continue to bring different products to market. Pay attention. Sometime soon, someone will make your life easier by selling you a computer. *Steven S. Ross*



2

Architect 2000

There's a computer in your future—your near future. In fact, there probably are several. Surveys of our readers early this year showed that more than three-quarters of the respondents are at offices where computers are in use for design and drafting. Computer use is increasing fast too, despite the mixed market for new construction.

But various practices are using widely different computer technology in widely different ways. This supplement cuts through the confusion to highlight the key trends, and to highlight how practices of different sizes and types are computerizing. Some conflicts:

- Computerization has spread most in the drafting room. But in the future, most practices may not have a separate drafting room at all. Each professional in the practice will have a computer or terminal.
- Use of computers for client presentations has spread at the high end—large projects—but also for the very smallest projects, to help less-sophisticated clients visualize designs. But it is generally not cost effective to do highly detailed visualizations too early in the process, when the design is still in flux.
- More conceptual design is being done on computers, but architects in many of the larger practices are resisting the trend—seeing it as a back-door way to force designers back to "drafting."
- The variety of hardware and software in use in architectural practices seems to be increasing, not decreasing. But the lack of standardization has not been a huge barrier, thanks to technical advances that allow everything to work together almost—but not entirely—seamlessly.
- Software has become easier to use for simple tasks, but more dazzlingly complex for those who wish to explore all possible software capabilities.
- Training has emerged as a major cost—perhaps *the* major cost—of computerization. But much of the cost has remained hidden in on-the-job informal training time and lessened productivity.

Exactly how are offices using computer technology these days, and how can computers enhance productivity and design quality?

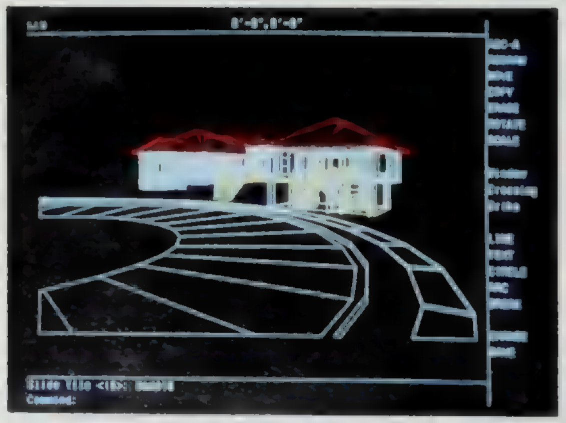
Survey results

Our surveys, as you might expect, showed that most offices are using drafting and design software. But they also showed wide use of spreadsheet and word-processing packages, and software for presentations, brochures, and bookkeeping.

Our surveys confirm that users of UNIX equipment from Sun, Intergraph, and others do mainly production drafting on their computers. Owners of DOS and Macintosh equipment are, on the average, far more eclectic, using their equipment for presentations, brochures, word processing, office recordkeeping and more. DOS users are more likely to favor drafting than their Mac counterparts, and Mac users are more likely to favor design and modeling. It's not that there isn't great rendering and presentation

Focus by building type *(firms can have more than one)*

Commercial	68	45%
Residential	62	41%
Institutional/religious	30	20%
Industrial	27	18%
Educational	27	18%
Health care	23	15%
Retail	23	15%
Offices	21	14%
Government/public	15	10%
Rehabilitation/maintenance	11	7%
Other	24	16%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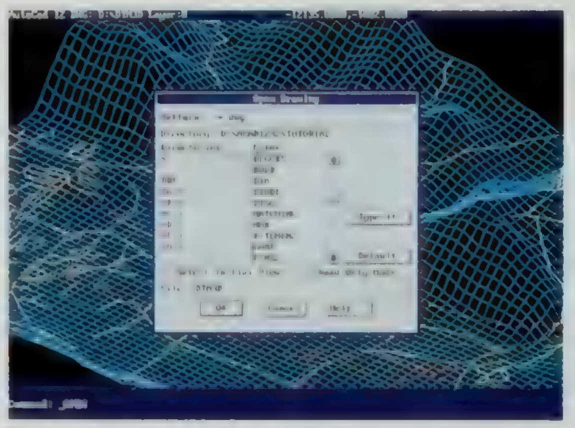
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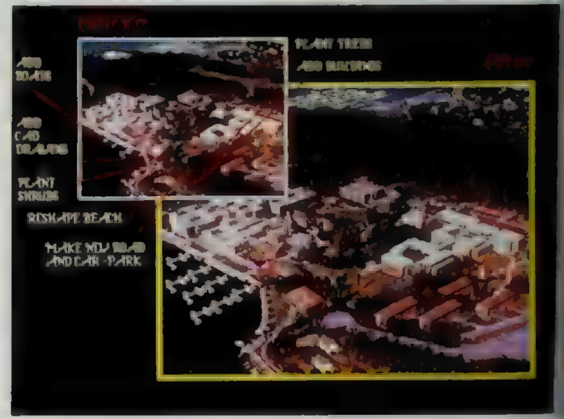

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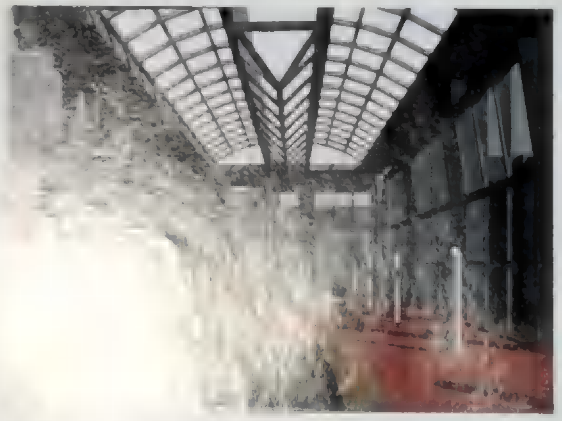
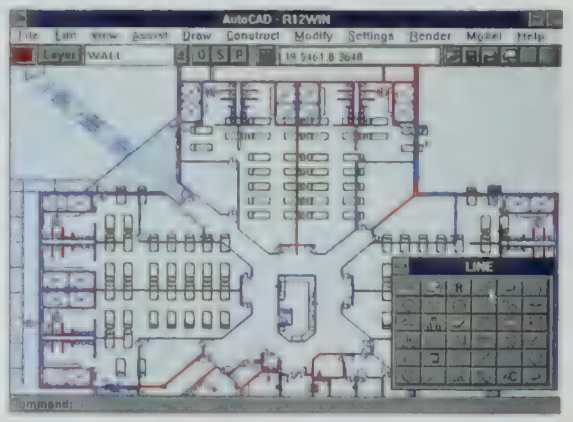




5

1. Even simple artwork can produce a slideshow-walkthrough that greatly enhances client understanding.
2. AutoCAD and other drawing software can be combined with the intelligence of geographical-information systems.
3. GIS representations can be rendered as in this RX image view
4. Modeling software combined with full-color output provides near-painting quality of this Finnish shopping centre.
5. Windows-based CAD adds flexibility.

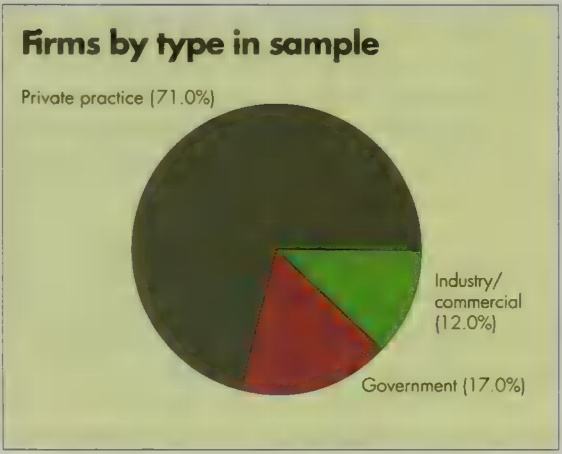
A survey of our readers shows how architectural offices are using computer technology these days, and how computers can enhance productivity and design quality.

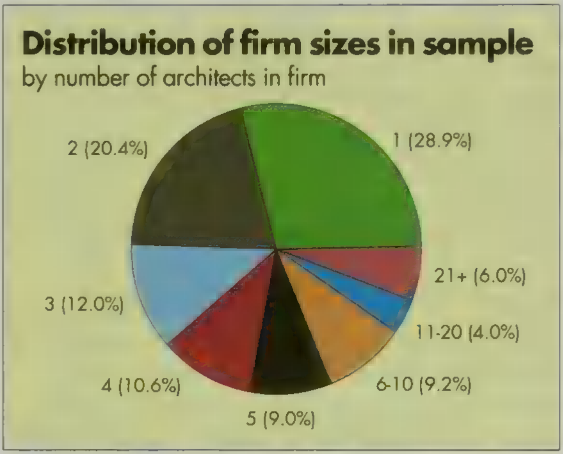
software for UNIX equipment. There is. But many practices seem to find it more cost-effective to do heavy-duty drafting on the heavy-duty machines, and do the other tasks on DOS and Mac equipment in the same office. That's odd in one sense, because tasks such as rendering actually take more raw computational power than straightforward drafting. But rendering and brochure and presentation materials are episodic; handling them on equipment dedicated to production drafting could disrupt the work flow.

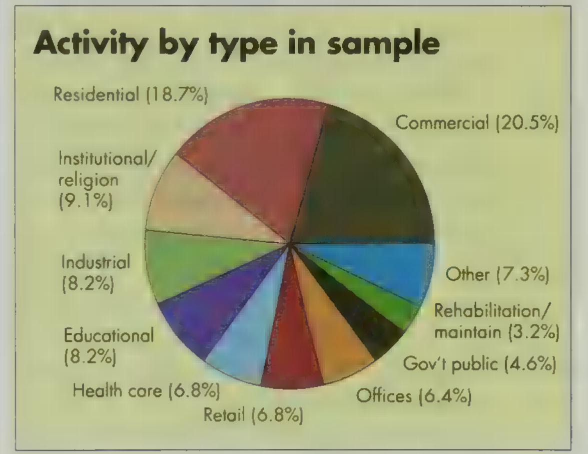
As UNIX equipment continues to come down in price—the smallest from Sun, HP, and other firms are priced no higher than the larger DOS and Mac machines—this division of machine labor will probably lessen.

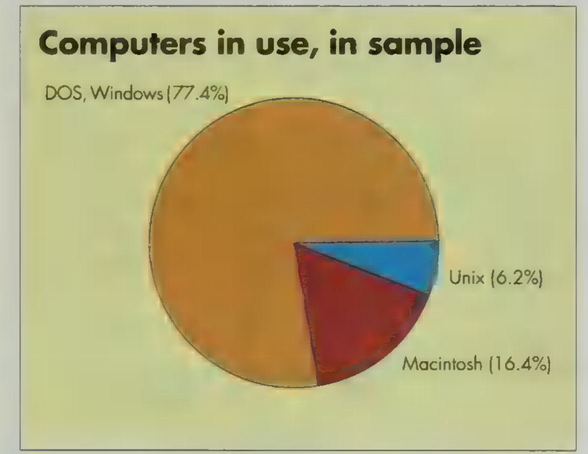
Small firms are much more likely to use computers for design than are larger firms. Firms with three or fewer principals are most likely of all to have computerized from top to bottom than are firms with more professionals.

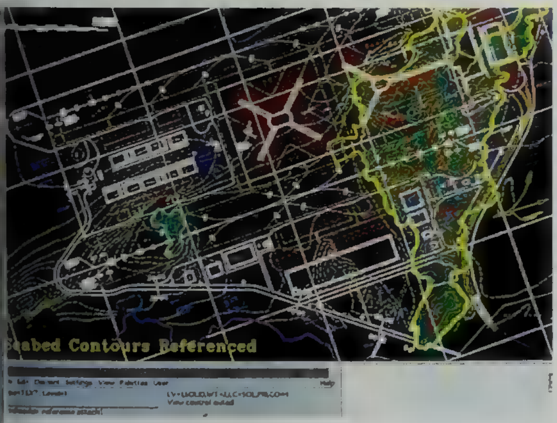
About 30 percent of the respondents do all schematic design manually. Another 10 per-

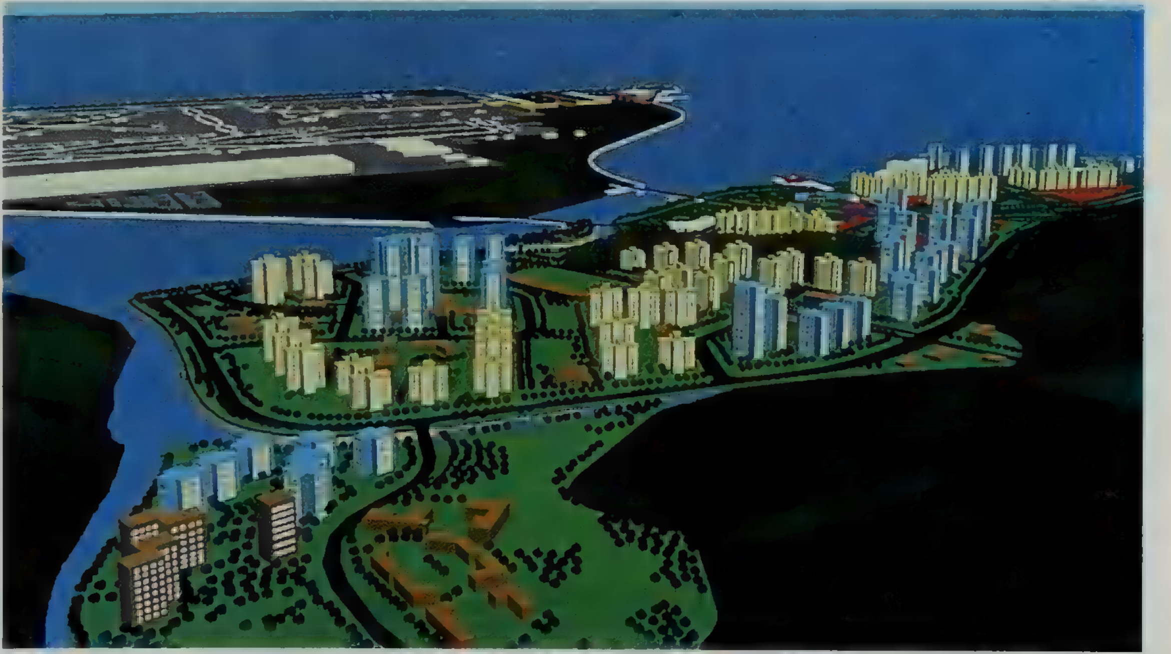












7

, 7. One drawing database can produce ildly different images for different pur- oses, as in these two views of the new ong Kong Airport.

cent do as much as half of their schematic design without any automation. But only about one in 20 do it all on the computer. Design development is fast becoming computerized, however, with fewer than a fifth of respondents doing it manually, and about 15 percent doing it on the computer.

When it comes to construction drawings, about one in six of our respondents said they do drafting entirely by hand; about one in four said they do it all by computer. About half said they do 75 percent or more of their drawings on computer, but only about one in four said they do as much as 75 percent of their drawings manually.

Despite the existence of many cost-estimating software packages, the task is split about evenly between the computerized and the manual—about a fifth of the respondents do estimating manually; a fifth do it all on computer.

When it comes to specification writing, however, the battle is over—well over half of our respondents say they do all of their specification writing on computer (although not necessarily with specification databases; many simply use word processors to cut-and-paste standard paragraphs). Fewer than 10 percent say they do it all manually.

The situation is much the same for preparation of brochures, bid documents, and other text-intensive tasks. Fewer than 10 percent still prepare documents manually.

Project management is split about evenly between computer and manual methods, and when it comes to training, more than a third of the respondents listed "on the job" training, with regular staff helping newcomers, as most important. Fewer than 10 percent use mainly outside training workshops, and about 10 percent have the luxury of using mainly in-house dedicated training staff.

Only a few—mainly Intergraph users—say they rely on dealer training. And only a few use college-based training courses or consultants coming to the office itself.

There's no particular pattern linking training methods or sources to other software or hardware. This seems odd, because most offices mix hardware and software from different vendors. Getting everything to work together in the most efficient fashion requires more than a careful reading of separate software and equipment manuals.

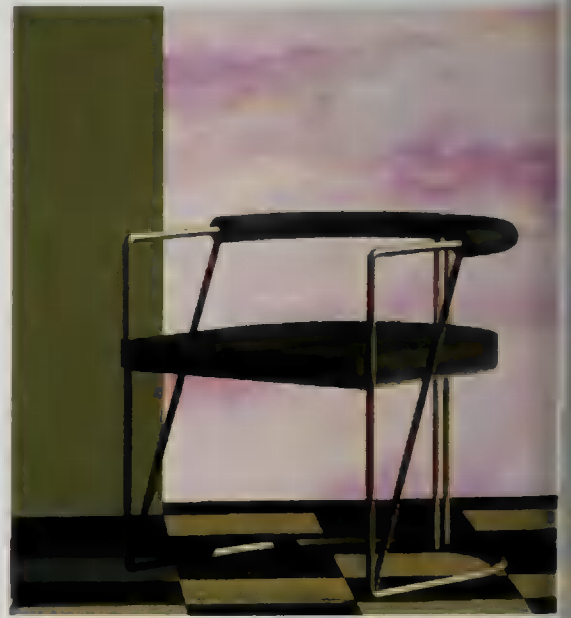
Three-quarters of the respondents report they distribute computer equipment among staff in general; only about one in seven say terminals are in specific, dedicated rooms.

On the following pages we've put together case studies of two architectural firms, highlighting how computer technology could affect your practice in the next three to seven years.

But first, consider this: On average over the past 20 years, computing power that can be purchased at a given price has doubled every 18 months. By the year 2000, if the trend holds, desktop computing power will double and redouble five times—ending up about 30 times greater than today's PCs.

Ever-increasing computing power allows us to "build" an entire project on a desktop. In the future, extra power will mean"smarter" drawings that "understand" building codes and incompatibilities between separate components. ■

[illegible] in 3-D [illegible] for these chairs and table, you can draw in 3-D or 2-D and adjust light and shadow



"Old-Fashioned" Architects Leap To the Cutting Edge

By Tom Bennett

For this Seattle firm, the decision to make the switch to computerization was easy or quick. David Nordfors and Guy Thomsen formed the firm in 1980, and for 10 years had been conducting business "the old-fashioned way." Schematic design was done with perspective sketches, construction documents drafted by hand, specifications written for each project.

Office manager Barbara Whitney handled all correspondence, specifications production, and bookkeeping. The firm handled many different types of projects but specialized in remodels and renovations, many for institutional and government clients.

The impetus to move to computers truly began when important clients began requesting projects to be submitted in CAD formats.

The start

Nordfors admits that "The switching process—from initial commitment to the idea, to installation of computers—took nearly four years."

This was in part because all employees of the firm were self-described "computer illiterates." Before taking the plunge, they knew they would need a solid grounding in computers and CAD systems. The firm sent Guy Thomsen, a 45-year-old senior project architect with 20 years of professional practice, back to school for a nine-month intensive certificate course in CAD management. His thesis for the certificate became a study of the implementation of technology as well as the technology itself.

Thomsen, together with the rest of the firm, ooked at the entire business process: How hey communicated within the office, wrote etters, memos, obtained prints, conducted lient communications, drafted details. Rather than laying down a CAD system on heir current work process, they decided to ell their existing equipment, move to a new ffice, and create an entirely new environment designed around the new system.

Tom Bennett consults on computerization f design firms.

Besides involving everyone in the decision process, they also decided that everyone would know how to use the majority of the applications—not just CAD but word processing, spreadsheets, and other support software.

Homework

They talked with other architects using CAD, getting a general picture of what they needed, then began looking at specific systems. It soon became clear they needed an expert, not just on computers but on how computers relate to architectural process.

They decided on a Macintosh platform. "Ease of use, and finding applications (especially CAD) specific to architecture were paramount to our decision," says Nordfors.

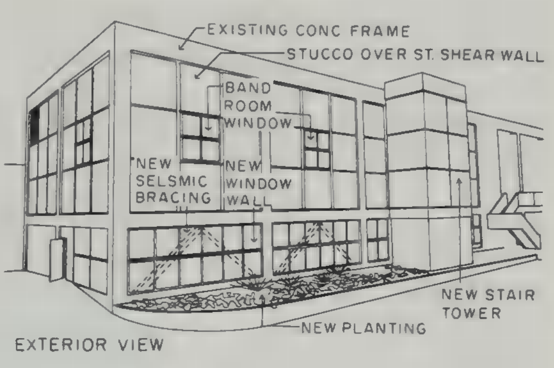
Once the platform was chosen, Nordfors solicited four separate proposals. They had to include the hardware, software, all warranties, technical service and support, and training. "Of course we were looking for the best price, but the other elements of the bid—the training, technical support, warranties—were really what would make the difference. We were going whole hog from the start, so our major concern was how long it would take us to be productive."

This process put them in contact with d'Arch, a local ArchiCAD reseller and Apple user.

Berry Yamashita and Dana Kruse at d'Arch are practicing architects as well as computer consultants, making them able to bring a unique combination of technical and professional expertise to Nordfors's problem.

With d'Arch's help, the firm bought the Macintosh IIci (8MB RAM, 100MB hard drives) and 21-in. gray-scale monitors for everyone as a standard, base configuration. All architects, including project architect Ty Heim and intern James Cave, have the same basic software: Microsoft Word for word processing, the Excel spreadsheet, Aldus Pagemaker, and ArchiCAD with Plotmaker.

"The more you do, the more memory and power your hardware has to have," says



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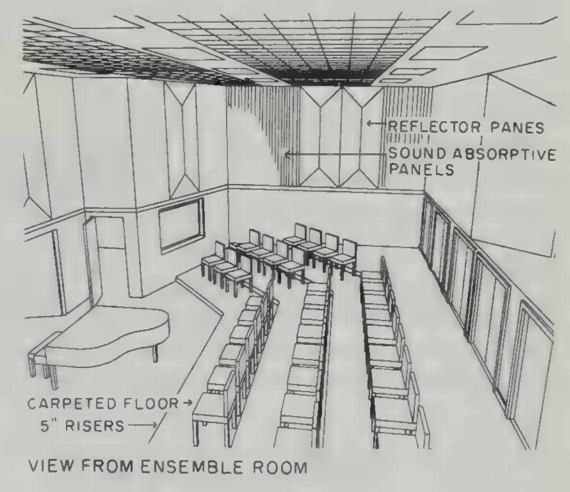

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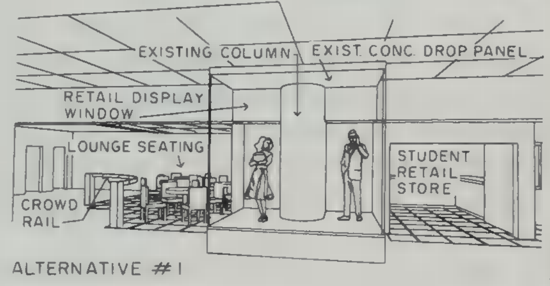

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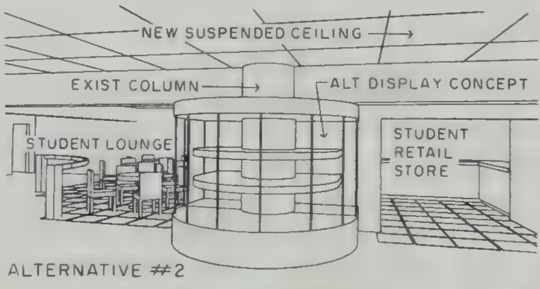


3b

Art courtesy of David Nordfors Architects

Bellevue (Wash.) High School

Using ArchiCAD on a Mac, exterior view (1) shows how 3-D makes images more understandable. A perspective view for remodeling the ensemble room (2) demonstrates that many views can be pulled from the same 3-D drawing. Two of many alternatives for a new retail space (3 a, b).

"We don't need drafting tables anymore. We may begin by sketching, but we move to the computer as soon as possible."

Nordfors. The IIci turned out not to be powerful enough; they were upgraded to Quadra 700's early in 1993. Coordinating software revisions with System 7 revisions has also caused some glitches.

As owner, Nordfors also uses Microsoft Project for project scheduling. Office manager Whitney maintains the accounting package. All of the computers are wired for EtherNet, though the slower AppleTalk is sufficient, allowing anyone to print or plot directly from their computer.

School

"We wanted to minimize any downtime as a result of the installation, so we got right to work learning the software," says Nordfors. "Our office is still small enough to gather around one computer, so we reserved two Fridays for basic training. A trainer began by running us through basic Macintosh skills—opening files, setting up the computer desktop, printing and saving. From there, we moved to basic software; opening Microsoft Word, typing a letter, formating it. What quickly began to evolve was a shared excitement about what we were doing; people were spending weekends in the office on their own time, learning as much as they could. Nobody was sitting around wondering what to do or if to do it, another advantage of having everyone buy into the decision."

By the end of two weeks, everyone had mastered the basics, and was ready to move on. Then d'Arch began with a series of training sessions on ArchiCAD.

Nordfors emphasizes using all the resources available for learning, some of them free. "In addition to our training, we attended user-group meetings, help sessions, and used the free technical support telephone numbers extensively. Rather than try and slog through it yourself, you can get a quick answer from someone who knows what they're doing."

[illegible]

[illegible] computers for every- [illegible] mail to [illegible] CAD.

[illegible] that everyone in the office now does their own correspondence and specifications. We've reduced a five-step process to one step," Whitney says. "We actually use one program—Microsoft Mail—more than any other single program. It's really streamlined our interoffice communications."

Nordfors himself uses Aldus PageMaker, a desktop publishing and graphics program, to turn out professional-looking documents and proposals directly from templates.

For CAD design and drafting, Nordfors uses Graphisoft's ArchiCAD, an architecturally specific drawing and modeling program. "We may begin by sketching, but we move to the computer as soon as possible." One of the real productivity gains occurs by reusing information generated in one phase, say design development, as a base for the next, a construction document. Now they do everything on CAD, except for small trace revisions. Even details are drafted and plotted using Plotmaker, ArchiCAD's plotting layout utility. Thomsen and Nordfors estimate they use CAD for design about 40 percent of the time, and drafting 60 percent.

Thomsen credits ArchiCAD's modeling and visualization tools with saving time in design development. "Many clients and even contractors have a hard time reading blueprints. By calling up a three-dimensional model, or doing a walk-through of a proposed design, the ideas become much clearer far more quickly, saving time and minimizing miscommunication."

Working across different computer systems using different software, while still a concern, is becoming less of an issue as computer makers design more "open" operating systems."We just finished a job where we had five different consultants, the majority working on AutoCAD DOS," says Nordfors. "We exchange files on nearly a daily basis, and by using the DXF format haven't had any problems at all."

Changes in productivity

Overall, the entire office has seen its productivity rise. "First, basic communication. A lot of people in our profession have forgotten that we are a service-oriented industry," says Nordfors. "And as in any service industry, communication—whether it's with clients, contractors, associates in the field—is paramount. In the past, our correspondence level was too high for our resources.. and a lot of these things didn't get done.

"Secondly, the legal aspects. We do a lot of jobs, especially remodels and re-roofing projects, on very tight time frames. Changes that are made have enormous ramifications, and simple miscommunications can have grave consequences. The ability to put together what is essentially a legal document (a new detail or change order) quickly, print it out, and fax it out to the job site is becoming more and more critical."

Guy Thomsen says computers let them handle more jobs than before. "In overall productivity, there was a time last year when we were swamped, more work than we could handle without hiring additional staff, people who might not be needed after the peak. Having computers and a CAD system in the office allowed us to level our human resources; David was able to put aside his administrative work and get to work on the drawings without leaving his computer."

The computer has freed Nordfors to pursue new business and maintain tighter control over job management. Thomsen now has visualization tools that streamline his design process, even to explore new markets, and expand design services.

Return on investment

In treating the switch as a business decision, it helps to look at return on investment as a criteria for how much to buy. It is surprising for Whitney to see, for example, how many firms balk at the idea of spending $30,000 on a computer system, but won't hesitate to spend that same money by hiring an additional person to do the same work.

Nordfors says the concept of payback is complex. "I think that there are really two separate issues to address. One is improved productivity compared to the way you used to get the job done. The second is the actual return on the investment in terms of doing things faster or expanding your scope of caabilities as a result of having the new echnology. With the basics, letters and preadsheets, it took about a month to get ip to speed. CAD is more complex. I'd say it ook us about six months before we were roducing work as quickly as we had before. And drawing details still takes longer than y hand to finish from scratch. Yet, the reatest gains are realized over time; the bility to re-use and adapt existing data is vhere the real return happens. We keep get-ing faster every project."

he Future?

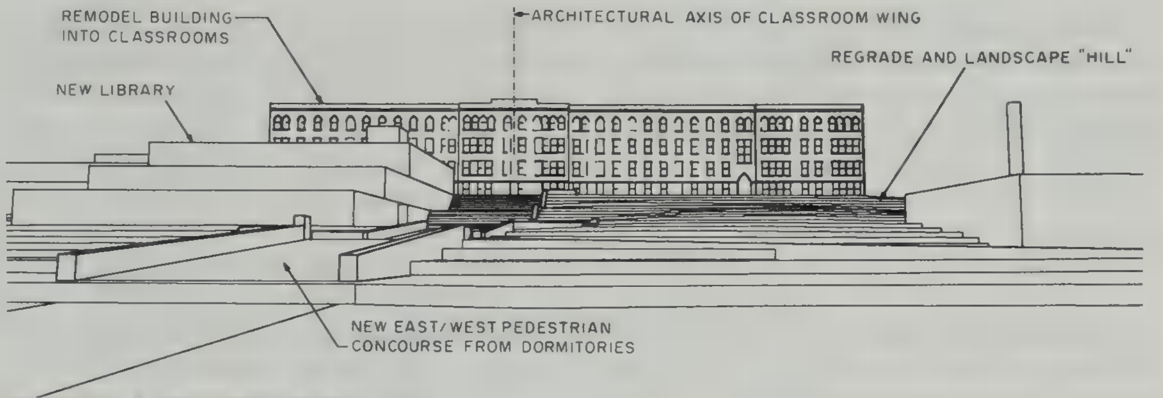
lthough happy with what they've achieved o far with computers, Nordfors' office staff ees their skills increasing as the technology dvances.

avid says, "We'd like to increase our ability o provide visualization services; very simple oncept drawings, even at the early stage, ave proved extremely helpful in explaining esigns to clients. We see technological im-rovements—cheap data storage, quicker endering speeds—helping us improve com-unication with clients."

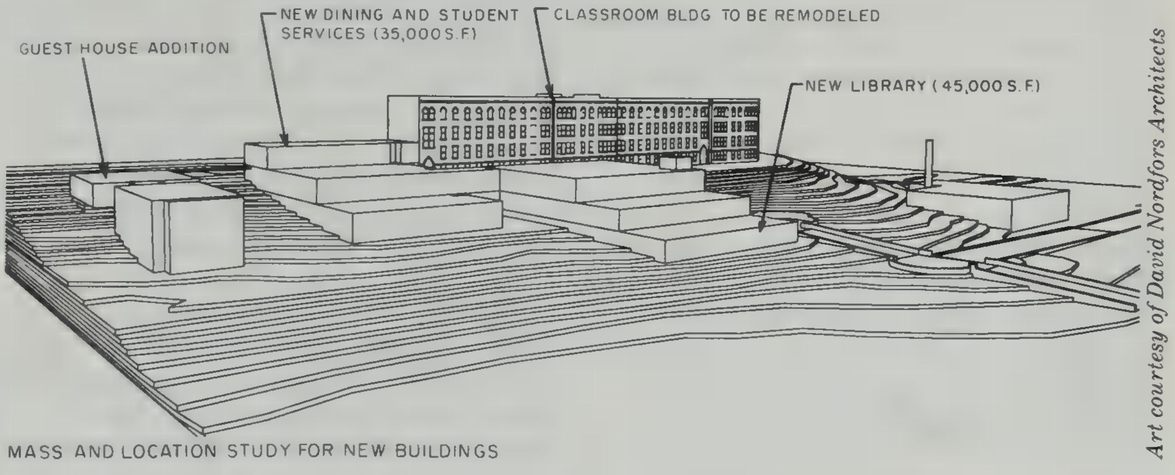
uggestions for other firms

aving gone through the process them-elves, Nordfors principals are happy to hare their thoughts on how other firms ight approach their own decision:

- Make the commitment, go all the way right ff the bat if you can.
- Be prepared to change the way you work. Don't think of computers as just CAD—ink of the entire work process; getting bs, producing the work, getting the job out e door.
- When buying, deal with an expert—some-e who knows architecture as well as chnology. You can't expect the software to ork exactly the way you do.
- Before buying, do your homework. Read agazines, go to trade shows, visit other of-es, ask questions.
- reat it as a business decision; look at fi-ancing options, return on investment, tax ins from depreciation.
- ssign a CAD Manager position in the m.; someone with the motivation and owledge to back up files, establish proce-ures, and handle day-to-day problems. ■

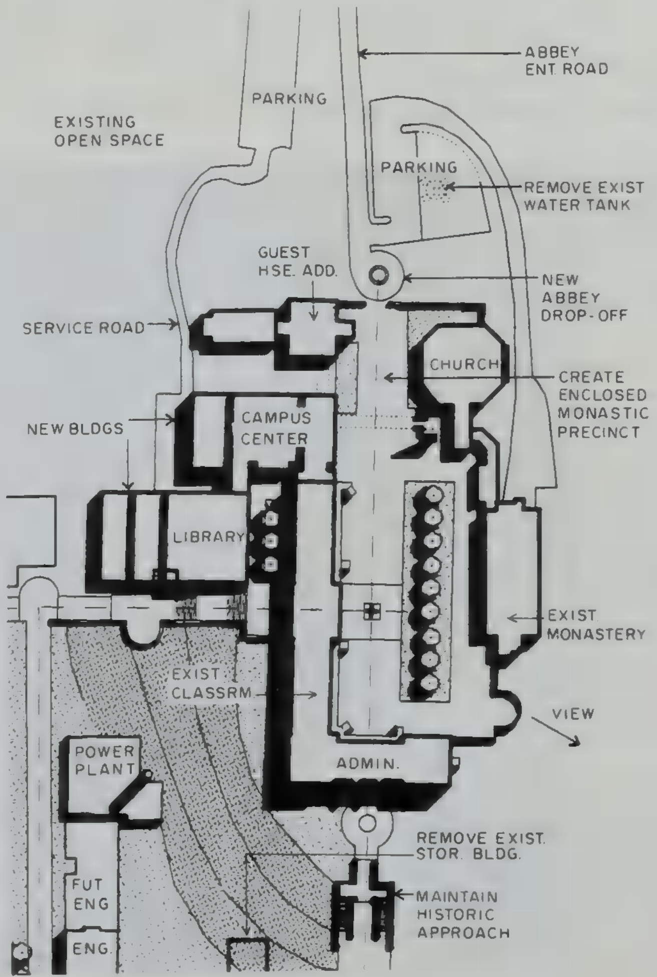

REMODEL BUILDING INTO CLASSROOMS
ARCHITECTURAL AXIS OF CLASSROOM WING
REGRADE AND LANDSCAPE "HILL"
NEW LIBRARY
NEW EAST/WEST PEDESTRIAN CONCOURSE FROM DORMITORIES

VIEW ALONG EAST/WEST PEDESTRIAN AXIS


GUEST HOUSE ADDITION
NEW DINING AND STUDENT SERVICES (35,000 S.F)
CLASSROOM BLDG TO BE REMODELED
NEW LIBRARY (45,000 S.F)

MASS AND LOCATION STUDY FOR NEW BUILDINGS

Art courtesy of David Nordfors Architects



St. Martin's Abbey and College

These drawings, sections of output prepared for St. Martin's, show how 3-D CAD capability can enhance client understanding. One properly prepared drawing can produce both the views above and an infinite number of others, simulating what people would see as they walk through the area. Even the plan view, part of which is shown at left, is enhanced with shadowing.

Planning for the 21st Century

Lord Aeck & Sargent has been an innovator in software development, and in the use of new computer tools for both the design and the management of new construction. Their approach

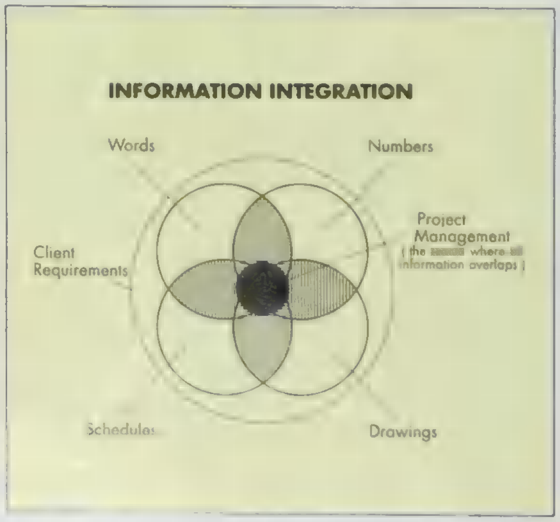
By Andy Smith, AIA

Snap! We threw away our pencils in 1989, and have enjoyed life in the ether ever since. That year, two Atlanta architectural firms, AECK Associates and Lord & Sargent, merged with a combined staff of 50. Today, Lord Aeck & Sargent includes 85 architects, interior designers, and related specialists.

It took nearly two years to combine our offices into a single one on a single floor. In an effort to amplify communications, we discarded all drafting tables and our new office design linked all staff desks, the library, the conference room, and project teams' tables with a data network and telephone. The network supports electronic mail and the telephone system supports voice mail.

Just as architects once ground their own pigments to create ink and paint, so must we now educate ourselves in bits and bytes, ROMs and RAM. Only after the commands and button-pushes become second nature will we be able to focus again on content.

Andy Smith is a 1984 graduate of the Georgia Institute of Technology, with a Master of Architecture degree. Since graduation he has been using and implementing computer technology in the architectural office. He is focusing on information integration and design tools for the architect.



[illegible] that devised new ways [illegible] in the office is

Why? Our design tools must support an ever-wider range of activity. Technology has introduced, literally, a new medium rich in geometry, color, and even motion. The challenge for the architect of the 21st century will be to become the "master of the media" as well as the "master builder."

The business plan

All of this forced a new way of managing our business. The architectural business historically has not been capital intensive. Purchase of computers, software, and staff education would seem a new departure. The business plan of the merged firm was revised to include technology costs.

Out of this evolved our "$15,000 rule," that for every hire $15,000 must be available for hardware, software, and training. By early 1993, the total had dropped to $12,000, reflecting the lower cost of hardware available for the desktop.

Hardware *$4,000*
DOS PC, 486 CPU, 50 MHz, 8 MB of RAM, SVGA color monitor, 120 MB fixed disk, digitizer tablet, network interface. In 1989 hardware costs were $7,000.

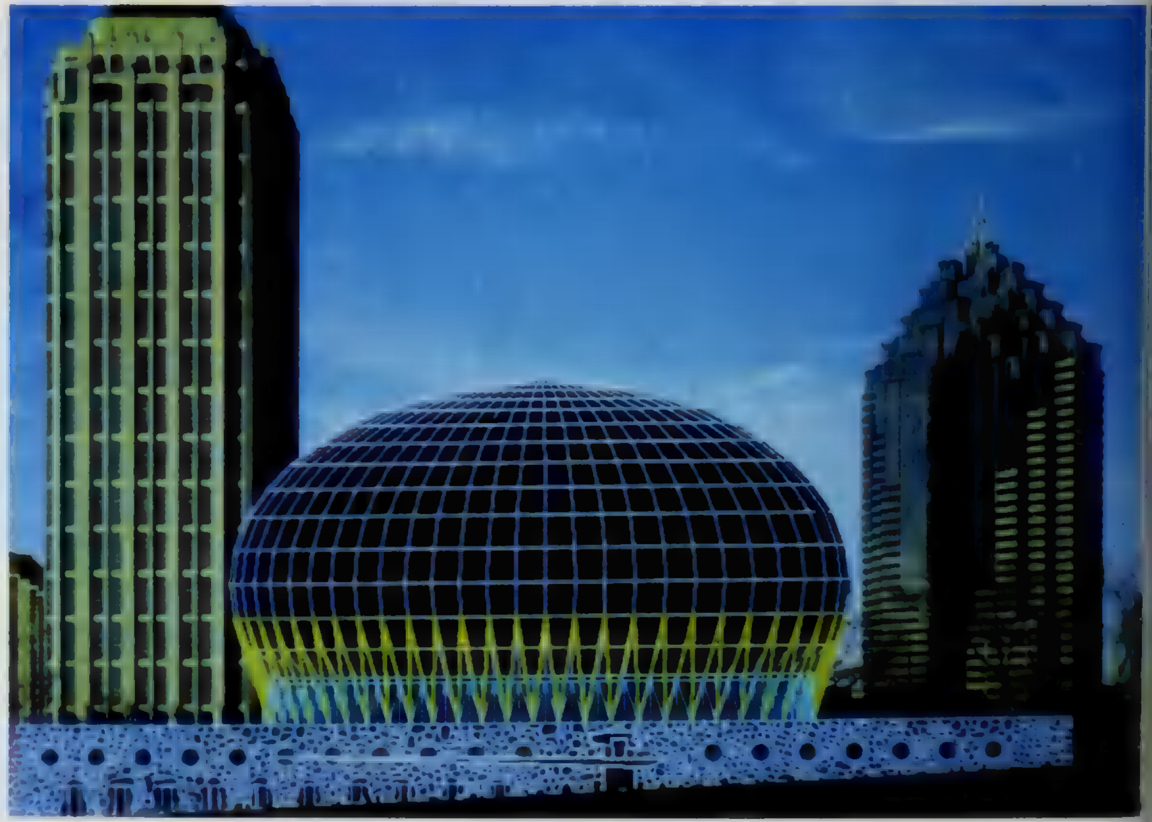
Software *$3,000*
Intergraph MicroStation PC. We buy in quantity, and save on the price somewhat.

Education *$1,000*
This is for formal education outside the office; in-house education is also provided.

Individual PCs are linked on a network with Novell Netware. The central server has a cluster of 3.2 gigabytes of disk space. Other devices on the network include laser printers, CD-ROM players, modems, and a scanner.

Indirect time *$4,000*
Investment is made in the first three months to move up the learning curve and become productive. In-house learning time actually costs more and is becoming the major part of the cost.

The entire office helped shape the plan to promote personal commitment, and it's always being revised. There are series of weekly firm-wide staff meetings to provide a



1

as helped them expand by over 50 percent in the past four years—hile much of the profession has been struggling.

orum to debate aspects of the business and o acquaint the staff with our goals and irection.

ducation

iscarding all drafting tables also meant disarding the traditional mechanical skills of rawing with pencil and paper. The new artst's palette includes CAD, rendering tools, ixel editing, desktop publishing, and blacknd-white and color output devices.

n 1990, our response was to establish an inouse training program, Lord Aeck & argent University, to provide education to ll staff in areas of technical computer use nd the practice of architecture. LASU uses n-house seminars and professional educaion services. The entire staff takes courses n CAD basics, word processing, and preadsheets. There are "graduate" courses n design and services delivery. LASU has volved into a forum for discussing and eveloping new methods for integration of echnology into the office.

iring and hierarchy

ord Aeck & Sargent does not employ drafters as permanent staff; only architects, nterior designers, project managers, and specialists. There are no "secretaries" as such; the job has grown into one of Project Administrator. This reinforces the idea of team play, where each member takes responsibility for an individual component of the process, committing to the success of the entire project. Each team member has access to *all* the team's information. There is no "middleman" information traffic cop. This reduces hoarding of information for empire-building.

The "matrix" management structure supports specialists such as a mechanical contractor, materials expert, interiors librarian, cost estimator, construction superintendent, and several computer gurus. They all roam the office, providing teams with expertise as needed.

We also have established a family of mechanical, electrical, plumbing, structural, and civil engineering consultants that shares our vision. We write consultant agreements in a manner that reinforces communication and open sharing of electronic data. We also provide technical support to our consultants as needed.

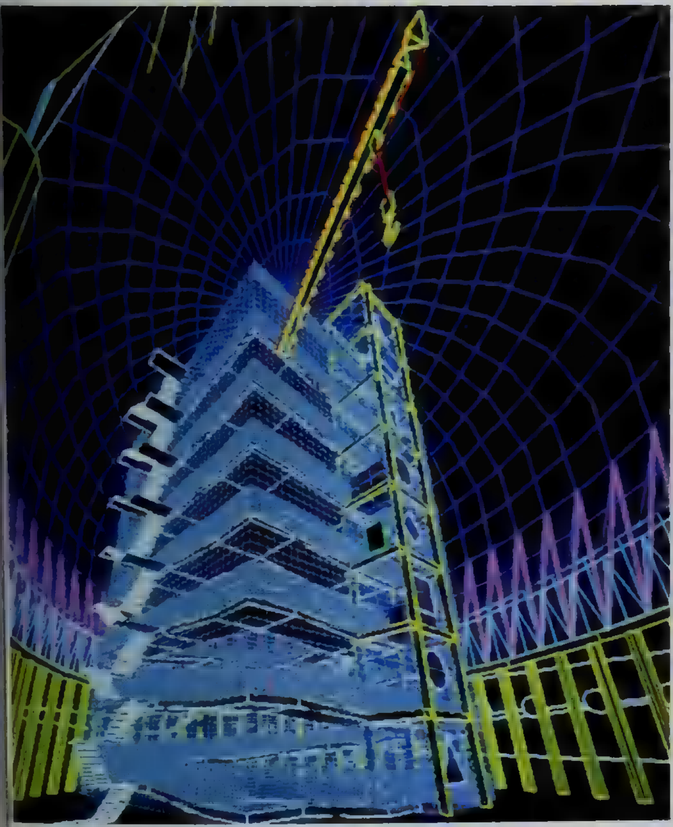
Within the office, we use a buddy system—"ask whomever is in sight." If a staff member has a technical or architectural question, he or she first asks a "neighbor," other team members, or the support staff, in that order. After all, the person sitting closest is probably most familiar with the problem as it relates to the project.

Our technology

The computer enhances our ability to reference everything together in a design. At present, we work in 2-D drawings, words, and numbers. Our vision is to move to a complete integration of construction documents and building-systems information.

Our concept is still one of "architect as master builder, inventor, and artist," but "information manager" has been added. Raw data, even piles of it, has minimal significance. Only the retrieval and synthesis of information transforms it into something useful. We have begun to develop an idea of "corporate knowledge" to track ideas and practical experiences that all staff can tap into for help.

The system should also help track all project information and provide a simple way to report its status (see chart, page 78).



3

The Lord Aeck & Sargent proposal for a children's museum shows the capability of modern 3-D CAD and rendering software—in this case, from Intergraph—to handle nonstandard shapes. The exterior view of this partially air-supported structure (1) is shown against the Atlanta skyline; the interior (2) is an attendee's-eye view.

Clients can get massive amounts of detail, as in this view of a laboratory and administrative offices building (3). Repetitive details are economical to draw and render.

> *"We will still be the master builders—as long as we control the technology and shape it to our purposes."*

But there are some caveats:

- If you draw it in CAD, the system should remind you to write the specification.
- If you specified it, the system should remind you to cost-estimate it.
- When you do the cost estimates, the system should retrieve the quantities from the drawing and the quality from the specification.
- Your project schedule should include drawing time, specification writing, and cost estimating.

Building technical expertise

To support all this, specialists focus on day-to-day activity. The specialists manage hardware and software purchases, education, the network, and project support for the project teams.

The specialists also develop new software as needed. In fact, CADDshare Corporation, a software-development firm set up in 1981 and now part of the firm, developed the AIA CONDOC for CADD software for Intergraph MicroStation. CONDOC is a methodology for document formatting and linking drawings to specifications.

We also negotiated with a local reprographic company to provide an in-house print facility that includes a large-format laser (electrostatic) plotter, large-format copier, and other traditional printing equipment in black and white as well as color. We would not have been able to experiment with such output devices without the partnership.

We see the future in this context for all architects:

- We will access the world's databases to serve our clients better and to develop new client deliverables.
- We will communicate ever more frequently with consultants and clients during the design process.
- We will be able to manage, interpret, and present information with greater quality and clarity.
- We will bridge the gaps between client needs, manufacturing, design, and construction.

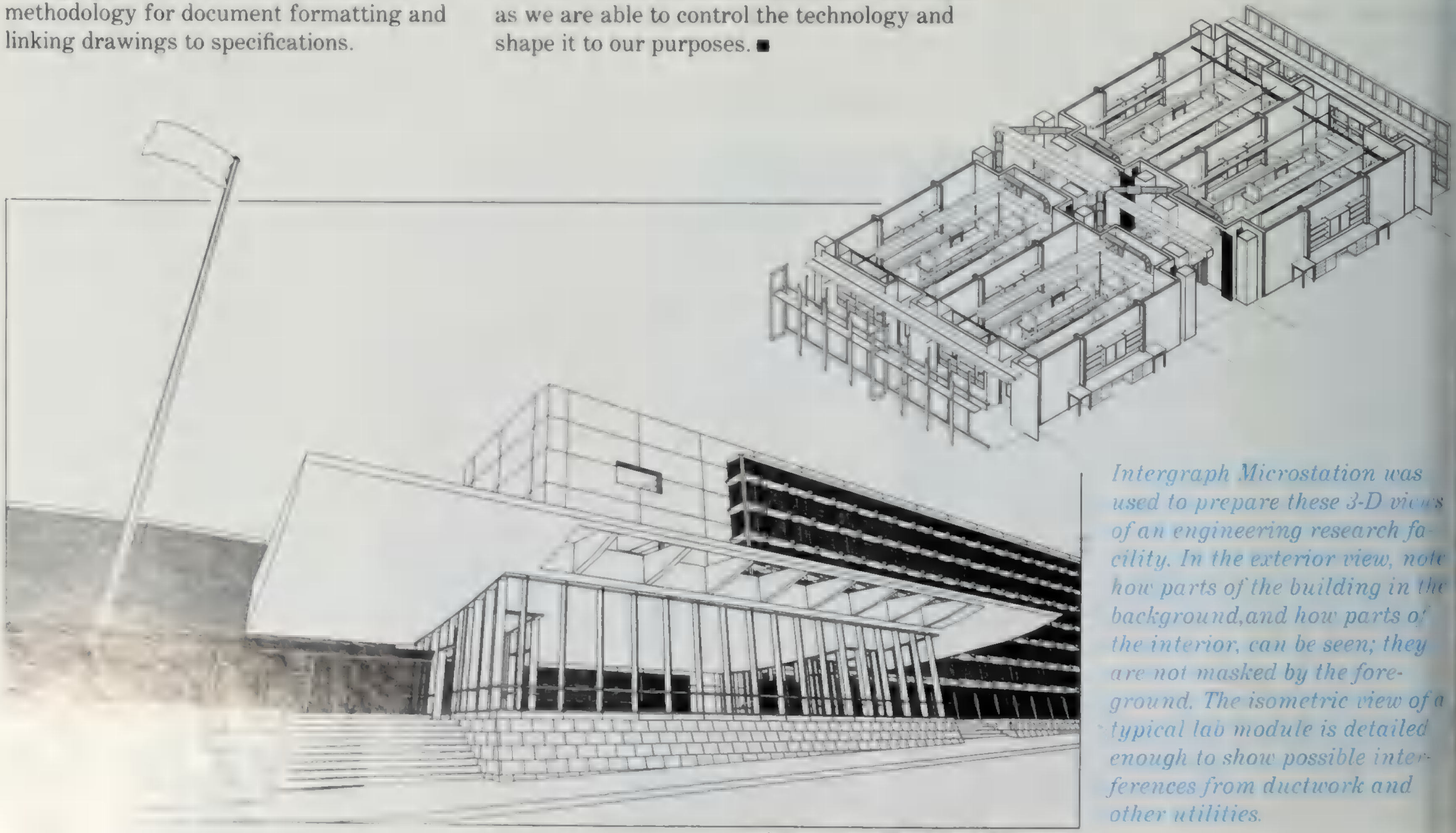
We will still be the master builders—as long as we are able to control the technology and shape it to our purposes. ■

Some indigestion

There have been some problems digesting all the technology. First, we underestimated how fast the firm would grow, and how fast each member would increase use of the system. Thus, fixed-disk space on the network is always insufficient. The network topology—how the wiring is arranged—is efficient but not flexible. When part of the system goes down, it can affect up to 10 users.

We also have underestimated the desire of staff to be trained on new software. We have yet to stabilize the process of choosing software packages, since it is constantly changing. We continue to spend too much time inventing the process.

Output always seems to be a bottleneck. Although we have a $60,000 plotter, there are always too many people clamoring for plots all at once. There seems to be no way to schedule that effectively for architects. ■



Intergraph Microstation was used to prepare these 3-D views of an engineering research facility. In the exterior view, note how parts of the building in the background, and how parts of the interior, can be seen; they are not masked by the foreground. The isometric view of a typical lab module is detailed enough to show possible interferences from ductwork and other utilities.

Art courtesy of Lord Aeck & Sargent

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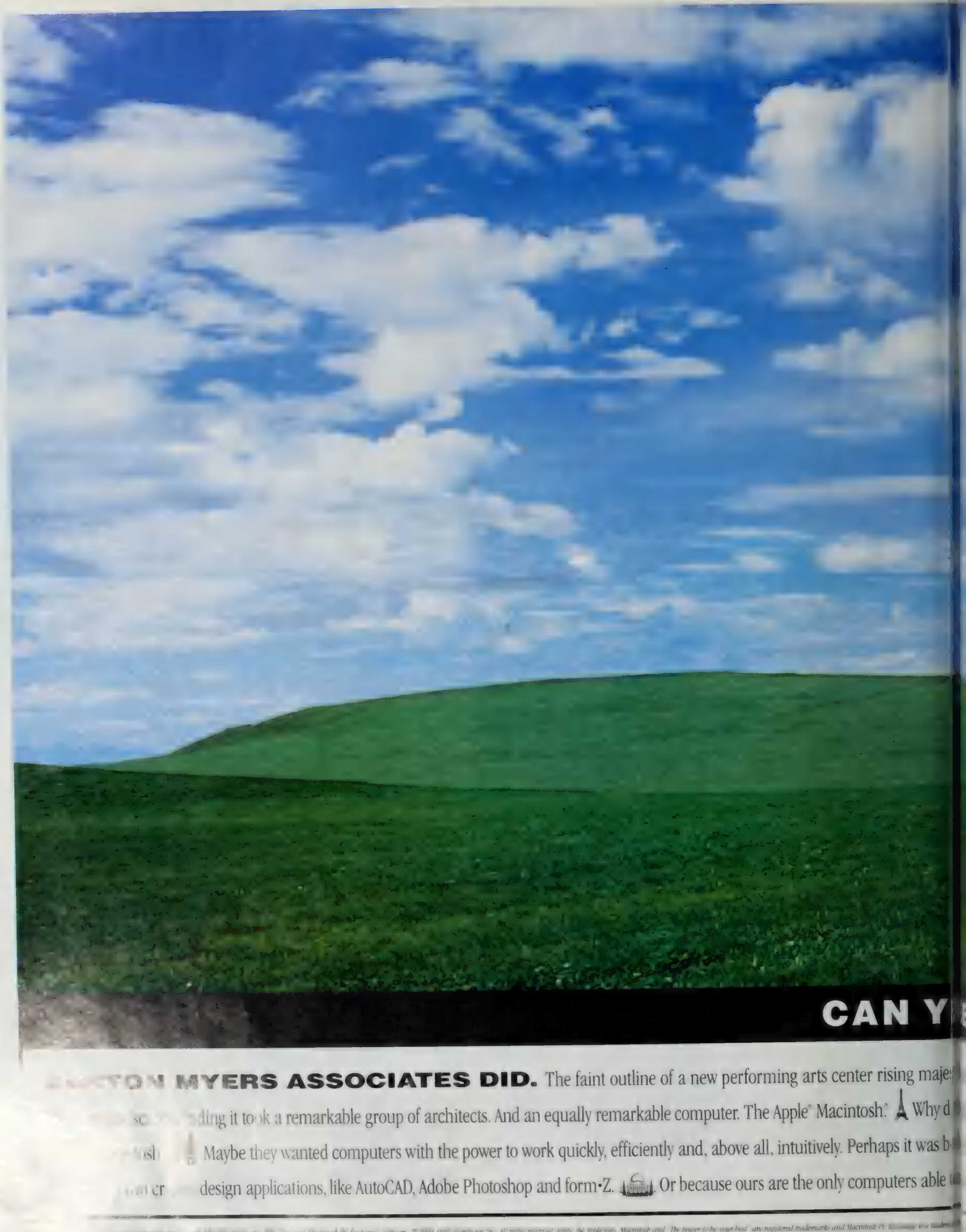

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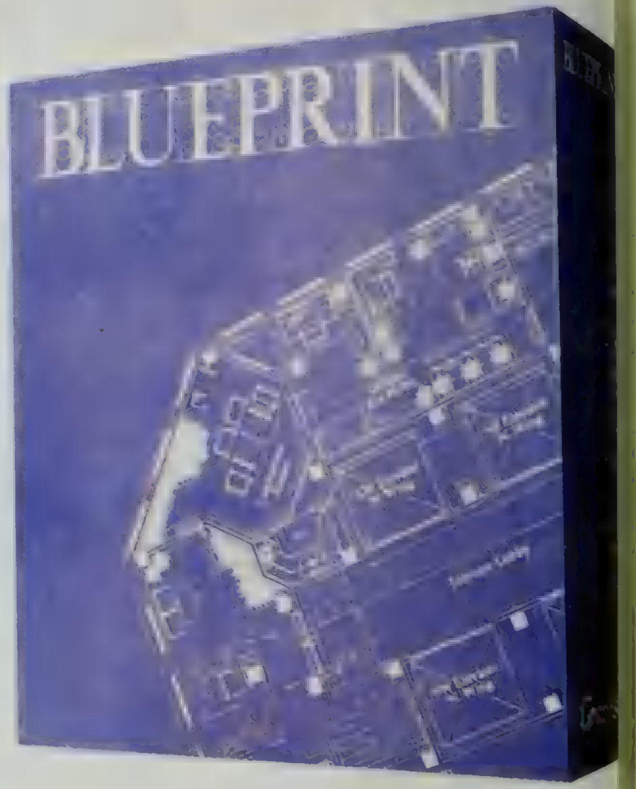

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- ☐ smart walls
- ☐ Smart Cursor for locating snaps
- ☐ advanced auto-dimensioning
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- ☐ color by object or layer
- ☐ DXF translator - free
- ☐ unlimited layers
- ☐ global symbol editing
- ☐ on-line prompts
- ☐ unlimited drawing space
- ☐ pick-up and put-down attributes
- ☐ selection by properties
- ☐ auto-insert symbols in walls
- ☐ hierarchical symbol library
- ☐ add & subtract surfaces
- ☐ fractional feet and inches option
- ☐ fillets
- ☐ editable fills
- ☐ beziers
- ☐ wall-join
- ☐ chamfers
- ☐ tolerancing
- ☐ unlimited saved views
- ☐ hatching
- ☐ polylines
- ☐ classes
- ☐ export EPSF
- ☐ free Claris CAD translator
- ☐ round wall caps
- ☐ edit inside groups
- ☐ scale by layer

3D CAD:

- ☐ mechanical projections
- ☐ orthogonal or perspective views
- ☐ work in wire-frame or solid
- ☐ walkthrough and flyover tool
- ☐ create 3D view from floorplan
- ☐ sweeps, extrusions & meshes
- ☐ 3D reshape tool
- ☐ roof & slab tools
- ☐ 3D smart cursor
- ☐ auto sectioning
- ☐ multiple view

Integrated Database/Spreadsheet:

- ☐ attach [illegible] objects
- ☐ export [illegible] merge, dif, & sylk
- ☐ [illegible] spreadsheet interface
- ☐ [illegible] field value
- ☐ create default records
- ☐ auto update reports

Programmability:

- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ no compilation needed
- ☐ read & write text files
- ☐ automate repetitive tasks

Claris CAD $[illegible]

2D CAD:

- ☐ smart walls
- ☐ Graphic Guide for locating snaps
- ☐ advanced auto-dimensioning
- ☐ editable line styles
- ☐ pan by scroll bars
- ☐ color by object only
- ☐ DXF translator - extra charge
- ☐ unlimited layers
- ☐ fillets
- ☐ editable fills
- ☐ beziers
- ☐ wall-join
- ☐ chamfers
- ☐ tolerancing
- ☐ 9 saved views
- ☐ hatching

3D CAD:

none

in Chemistry

Integrated Database/Spreadsheet:

none

Programmability:

none

Blueprint 4 $[illegible]

2D CAD:

- ☐ smart walls
- ☐ Smart Cursor for locating snaps
- ☐ advanced auto-dimensioning
- ☐ editable line styles
- ☐ pan by scroll bars or hand
- ☐ color by object or layer
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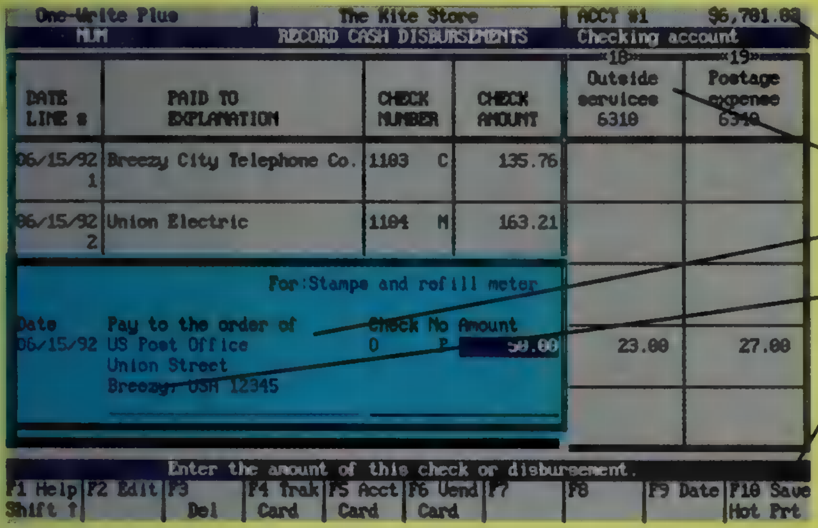

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  NUM                    RECORD CASH DISBURSEMENTS     Checking account
                                                       «18»        «19»
 DATE     PAID TO                    CHECK    CHECK    Outside     Postage
 LINE #   EXPLANATION                NUMBER   AMOUNT   services    expense
                                                       6310        6340
06/15/92 Breezy City Telephone Co. 1103   C   135.76
       1
06/15/92 Union Electric            1104   M   163.21
       2
                    For:Stamps and refill meter
Date     Pay to the order of        Check No Amount
06/15/92 US Post Office             0        P   50.00  23.00       27.00
         Union Street
         Breezy, USA 12345
           Enter the amount of this check or disbursement.
F1 Help|F2 Edit|F3   |F4 Trak|F5 Acct|F6 Vend|F7 |F8 |F9 Date|F10 Save
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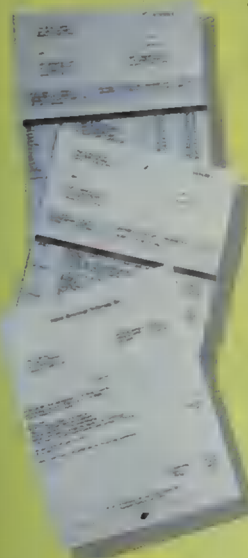

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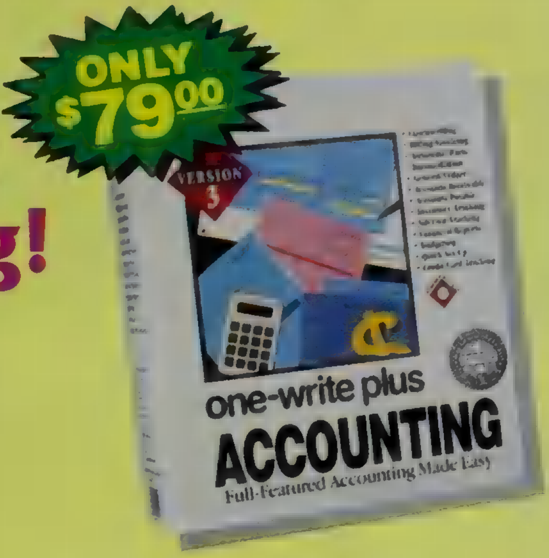

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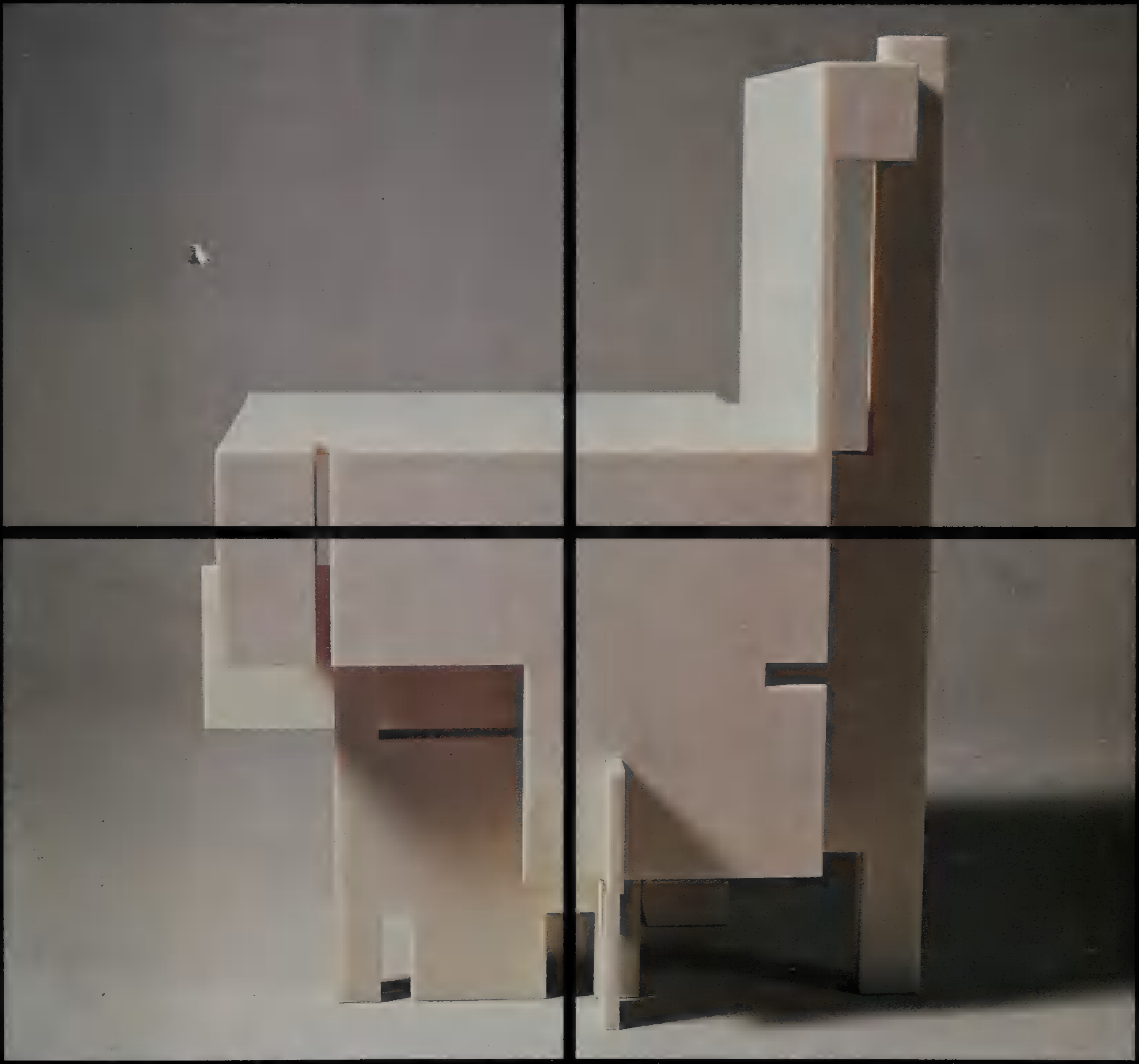

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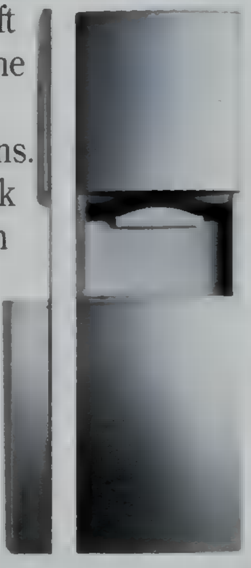

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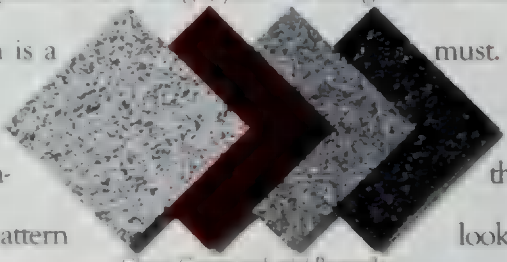

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ARCHITECTURAL RECORD 6/1993

Building Types Study 706/Infrastructure

These days transportation facilities and utility projects are too often treated as necessary evils, and they have increasingly become contentious neighborhood intrusions. This issue features examples where architects seized the opportunity presented by a renewed emphasis on infrastructure planning and building to show that design has an important contribution to make. In new airports in Pittsburgh (page 100) and Denver (page 106), the architects created public spaces that counteract the disorientation caused by their vastness, while a new terminal at London's Heathrow excels despite ad-hoc airport growth (page 108). A cooling plant in Minneapolis (page 112) and a telecommunications substation in Seville, Spain (page 116), make utilitarian facilities into good civic neighbors, rendering at once visible and understandable the usually hidden engineered viscera that undergirds our modern lives. Parking garages, typically eyesores, are, in skilled hands, elegant urban infill (page 126) or a forceful sculptural presence (page 130). Plans for the Jubilee Line Extension in London (page 120) show how a group of architectural firms unfettered by past conventions can bring new vigor to a difficult building type and, in effect, use design to repay the public for the enormous financial investment such facilities entail. *James S. Russell*

Manufacturers' Sources listed on page 147

Uncivil Engineering

On Mercer Island, near Seattle, a small wooden park shelter perches over a lushly landscaped "lid"—a three-quarter-mile-long platform of trees and tennis courts set atop three vast concrete portals conveying 10 traffic lanes of nearly complete Interstate 90. That tens of millions of dollars and thousands of tons of concrete and earth were arranged to support this shelter—worth perhaps $60,000—and protect a few dozen homes from the noise of the freeway passing through their neighborhood, is emblematic of the bizarre realities of infrastructure development today. In communities all over the country, bridges are closed or allowable weights reduced due to lack of maintenance; water mains errantly break; trains creep when they should roar—all because we don't seem to have the money to fix tracks, pavements, and utilities. In a few communities, as in affluent Mercer Island, huge funds are spent, vastly disproportionate to any conceivable benefit, in unremarkable projects whose primary goal is to move ahead a long-stalled project (expansion of the I-90 segment was debated for some 20 years).

Architectural historian Robert Brueggman writes (in the Winter 1993 *Design Quarterly*), that infrastructure wasn't always done this way. "Thousands of stone viaducts, reservoirs, and lighthouses dating from the 19th and early 20th centuries stand as handsome reminders of America's pride in its infrastructure." Only a few decades ago, design attention was thought essential, producing such memorable structures as San Francisco's Golden Gate, or the beautifully landscaped parkways around New York City, whose ever-changing vistas gave testimony to the gracious life of the community they passed through. Today, it's rare to find a prominent bridge or utility structure that departs even slightly from the ultrastandardized civil-engineering kit-of-parts.

Last year, however, witnessed what seemed a sea change in the way we think about infrastructure. Transportation funding was approved (the Intermodal Surface Transportation Efficiency Act—ISTEA) that gave local officials much wider latitude in allocating funds to transit and a wide variety of "enhancement" (which can include bikeways, wetlands restoration, or historic preservation) based on needs developed through a comprehensive intermodal planning process. The ISTEA idea can be extended to other kinds of infrastructure planning, bringing a broader view than the civil-engineering tunnel vision that has produced the stupefying structures we too often see around us. Projects shown in this issue of ARCHITECTURAL RECORD focus on individual design and planning issues that have been too-long neglected in infrastructure development. Building a national consensus on what to build and how much to spend requires an understanding of broad trends, the [illegible]

[illegible] going?

[illegible] a wide variety of infrastructure categories [illegible] percent of gross domestic product (GDP) [illegible] 990, well behind our international trading [illegible] regions' state and local expenditures have covered some of the decline, the federal withdrawal has exacerbated a gap between the infrastructure "haves" (rapidly expanding newer communities) and the "have nots" (older communities with declining tax bases and a high percentage of decaying facilities).

The amounts various experts say the country must find to expand and update these systems are mind-numbing. *Business Week* projects $800 billion or more in spending including the "digital highways necessary for the information age." (Congress appropriated about $49.3 billion in aid for fiscal 1993, a whopping $10 billion of which goes to various environmental cleanup funds). Water and sewer agencies and the EPA think we need to spend $138 billion on systems and wastewater treatment over 20 years ($6.9 billion per year versus the $2.5 billion-plus Congress approved for fiscal 1993). This is already one of the fastest-rising categories of infrastructure spending. A nationwide fiber-optic digital data network (much of it privately financed) may cost $325 billion.

Airports, transit, and highways

The recession has cut airline traffic and reduced congestion considerably. Thus, the FAA claim that 58 airports will be "seriously congested," causing delays for 74 percent of the nation's passengers by the year 2000, may be overstated. Passenger taxes support much airport construction through a federal trust fund, much of which remains untapped as a deficit-reduction ploy. Financially troubled airlines are reluctant to bear much of the cost of new facilities, requiring New York's JFK Airport, for example, to drastically scale back a $3-billion rehabilitation. (A vast central departure/arrival building, designed by Pei Cobb Freed to unsnarl the traffic mess created by nine existing terminals, each with its own idiosyncratic arrival/departure scheme, was cancelled.) Many airports have taken advantage of a new three-dollar-per-passenger departure tax to finance improvements. Over 34 years it will raise $2.3 billion to pay of Denver's new airport (page 106). Real congestion relief is hard to obtain, however, because a combination of cost, lack of available land, and citizen objections to airport noise makes runway expansion virtually impossible in much of the U. S. These concerns have killed, fo now, Chicago's up-to-$10 billion third airport.

Does new transportation funding, mandating regionwide planning, represent a sea change in the way we think about infrastructure?

Transit funding has come under attack principally because all of th newer systems have been over budget and under ridership projections. "Actual patronage of [new] rail systems in nine cities was les

he stupefying bleakness of much of the civil-engineered landscape s creating new opportunities for architects and designers— f they can prove their value on every project.

an half of that originally forecasted," the Department of Trans-
rtation found. The consensus of experts is summarized by *Fragile*
undations, a report to Congress by the National Council on Pub-
Works Improvements: "Systems in larger metropolitan areas are
ing, deteriorating, and undercapitalized. Systems in smaller met-
politan areas are underused and overcapitalized." An example:
s Angeles county projects spending $48 billion over 30 years on
0 miles of metro urban rail and 190 miles of commuter rail lines.
e New York metropolitan area, by contrast, which has 25 percent
the entire country's transit users and thousands of miles of track,
s barely managed to scrape up $9.6 billion for a 10-year capital
ogram (a response to decades of neglect) amid enormous budget
essures. It took $16 billion over the last 10 years just to bring ser-
e to generally accepted levels of dependability.

ghways command an overwhelming share of infrastructure dol-
s (it is 36 percent of federal fiscal-year 1993 infrastructure
ending; more than four times the runner-up category). Last year's
TEA legislation established a six-year, $155-billion spending pro-
am. Of this, $80 billion can be used for either highways or transit.
mpare this to the $129-billion price tag for the construction of the
tire 43,000-mile Interstate highway system or the $174 billion
ent in federal-aid highway funds (which cover a wider range of
ojects) since 1976. Still, various analysts report that up to 60 per-
nt of roadways need some rehabilitation and 40 percent of bridges
e at least "functionally obsolete." Road and bridge needs are in-
easing exponentially for several reasons. Highways wear out
ster than other systems; declining populations in older cities mean
at there are fewer resources to repair aging facilities; low-density
velopment patterns require a high percentage of highway miles
r person. And suburban drivers drive more: Department of Trans-
rtation studies show growth in mileage driven vastly outpaces
pulation growth and is much higher than the growth of highway
leage. To keep highways uncongested will mean building them at
ace many times faster than we do now.

nancing infrastructure

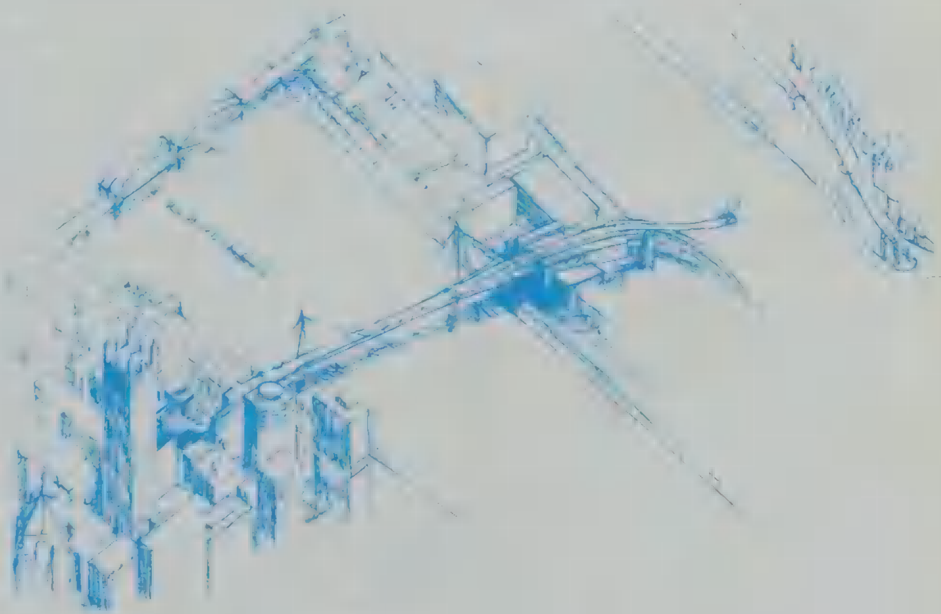
esident Clinton has pledged vastly increased funding for infra-
ucture projects both in the short and long terms. Old ways die
rd, however. Critics are already contending that ISTEA money is
t being used as legislators intended, and Clinton's jobs bill—which
luded money for many infrastructure projects "ready to go"—
s at this writing fallen victim to familiar congressional gridlock.
ith enormous government budget pressures, the nation will likely
n more to user fees—dedicated fuel taxes, for example—that are
ually applied exclusively to the system from which they are col-
ted. Highways are likely to shoulder most of the burden, since the
erall user-fee support for direct highway costs is still below any
er infrastructure category, according to an ISTEA-mandated re-
t, *Financing the Future*, by the Commission to Promote
estment in America's Infrastructure. And highway taxes will
ly be diverted in greater amounts to transit funding as an urban
gestion-relief measure. Other experts advocate "congestion pricing" using tolls to reduce unnecessary travel during peak periods. *Financing the Future* also suggested some novel means to tap private capital as a means of underwriting infrastructure.

In spite of low ridership, the shift to transit and rail may increase because expanding and rehabilitating busy existing highways in built-up areas is so costly. While new highways in undeveloped areas can range as low as $15 million per mile, new urban freeways (where the need is greatest) usually come in at well over $100-million per mile. Also, the disruption of established traffic patterns for reconstruction reverberates through an urban freeway system, causing mind-boggling delays. Such concerns—and log-jammed airport improvements—are causing localities to turn to *multimodal* solutions, linking airports with downtown by rail; combining bus and transit terminals. States increasingly are boosting Amtrak service with their own funds as both an economic development tool and, where service is fast enough, a form of relief for airports. (Amtrak's busy northeast corridor handles as much New York-to-Washington traffic as both twice-hourly air shuttles.) Advanced train technologies such as Maglev or Japanese bullet trains were recently given an administration push.

The designer's place in infrastructure planning

With the enormous cost of infrastructure, architectural or landscape design strikes many as a hard-to-afford frill, and architects or designers as just another constituency to please. Historian Bruegmann speculates that infrastructure's invisibility—it's *lack* of design—may in part account for the public's aversion to paying for it. With tight money the rule, design will have to prove itself on every project. Those featured in this issue went beyond solving the func-

Continued on page 145



Wabash Bridge Proposal, Pittsburgh

Pittsburgh Hub

Midfield Terminal Complex
Pittsburgh International Airport
Pittsburgh, Pennsylvania
Tasso Katselas Associates, Architect

Pittsburgh Airport's new Midfield Terminal—the latest hub incarnation—shows how complex passenger terminals have become.

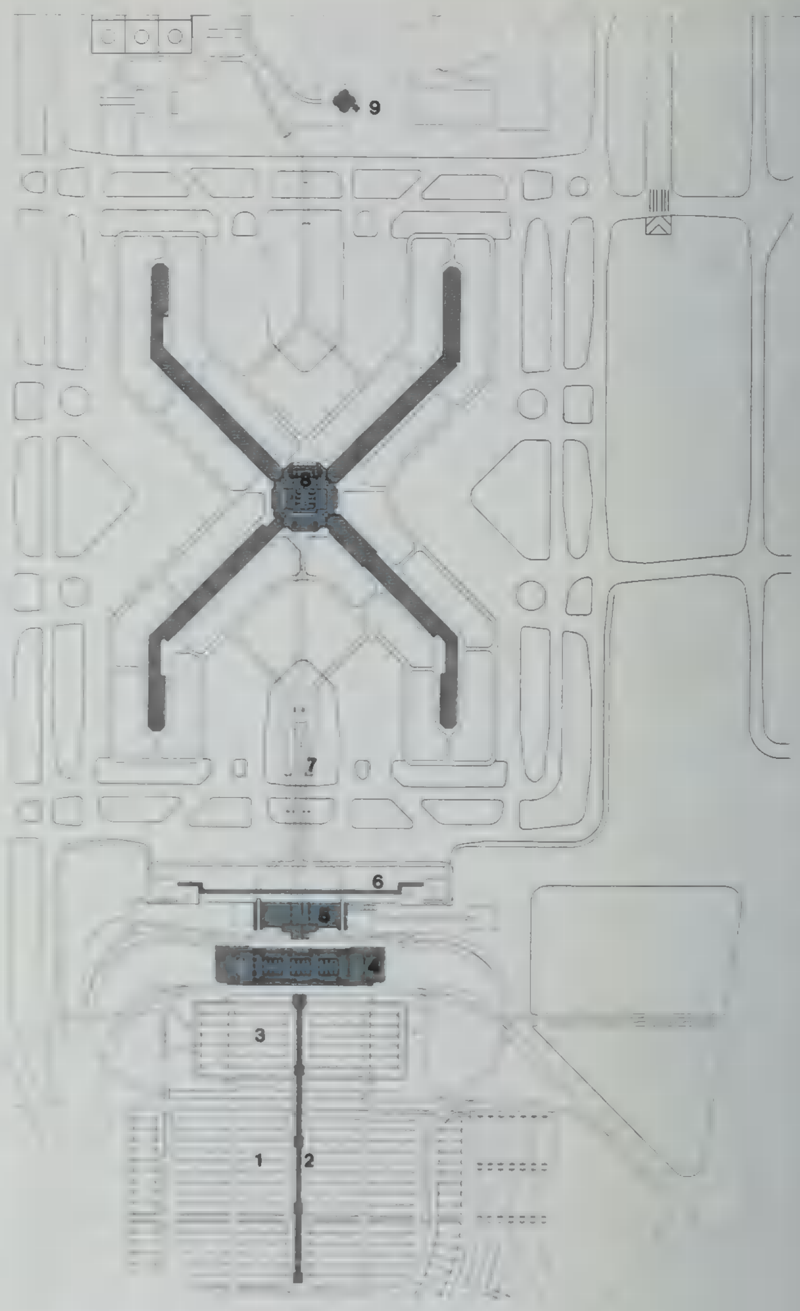
American airport design is still reacting to the changes wrought by airline deregulation in 1977, which led to the hub-and-spoke system that dominates airline travel. Airlines transport passengers from any number of locations through "spoke" connections to a central "hub," and on to a multitude of destinations. The hub system gives passengers many more travel choices, thus improving ticket sales. The new $780-million Midfield Terminal at Pittsburgh International Airport is the latest hub incarnation.

In 1980, Tasso Katselas Associates (TKA) began developing a program and master plan with the Department of Aviation and the airlines. According to Katselas, all subsequent design decisions were measured against four established criteria: passenger convenience, operational efficiency, expansion capability, and economic effectiveness. The major differences between Midfield and previous hub airports are twofold. First, Midfield separates ticketing and boarding into "landside" and "airside" terminals. The landside terminal is flanked on the east side by grade-separated public transportation dropoff and pickup ramps, and on the west side by ramps for private automobiles. Katselas calls this doubling of the usual departing and arrival levels "the heartbeat of the solution" and essential to overall efficiency. Passengers check in at the landside ticketing level, descend to the transit level, pass through security, and catch the people-mover to the airside terminal. The farthest possible distance from parking lot to gate is 1.4 miles or 20 minutes by foot, automated walkway, and people-mover.

Second, Midfield's airside terminal is X-shaped instead of having separate linear concourses as at the prototypical hub of Atlanta and the new Denver airport (page 106). This allows passengers changing planes to access all 75 gates in the airside terminal on foot and via moving walkways rather than having to descend to a transit level as is required at the other two airports. Arriving and departing passengers and those transferring to commuter planes use the people-mover to the landside terminal. Midfield's principal tenant, USAir, invested some $40 million in computers to provide up-to-the-minute information on flight schedules and a baggage-handling system with lasers to scan bar-coded baggage tags. The result is a veritable showpiece of current airport technology.

The X's four concourse arms are surrounded by dual apron lanes running in opposite directions and its core is a mini-mall of restaurants and shops, diversions for the mostly transfer-passengers. TKA's study of its airside terminal design, done with the Department of Aviation and FAA personnel, concluded that dual lanes ease airplane movement, servicing, and parking; current projections show savings between $10 to $15 million per year in fuel costs. Other measures to prevent interruption of taxiing airplanes include 12-foot-deep tunnels for service vehicles. During construction, changes in FAA security requirements prompted a new look at the overall accessiblity of the tarmac and reinforcement of tunnel security.

For all of its innovations, Midfield's outward appearance is disappointing, like a conventional office building, especially when compared with such great monuments of flight as Eero Saarinen's [illegible] John F. Kennedy Airport. Barrel-vault roofs mark [illegible]es, but these are overpowered by the complex's [illegible]ddle) Steel canopies that cantilever 40 feet to [illegible]ile elegant (previous pages), are only ac- [illegible]aming. The complex projects a public [illegible]ing an uplifting symbol, more [illegible]s of today's jaded air traveler. ■

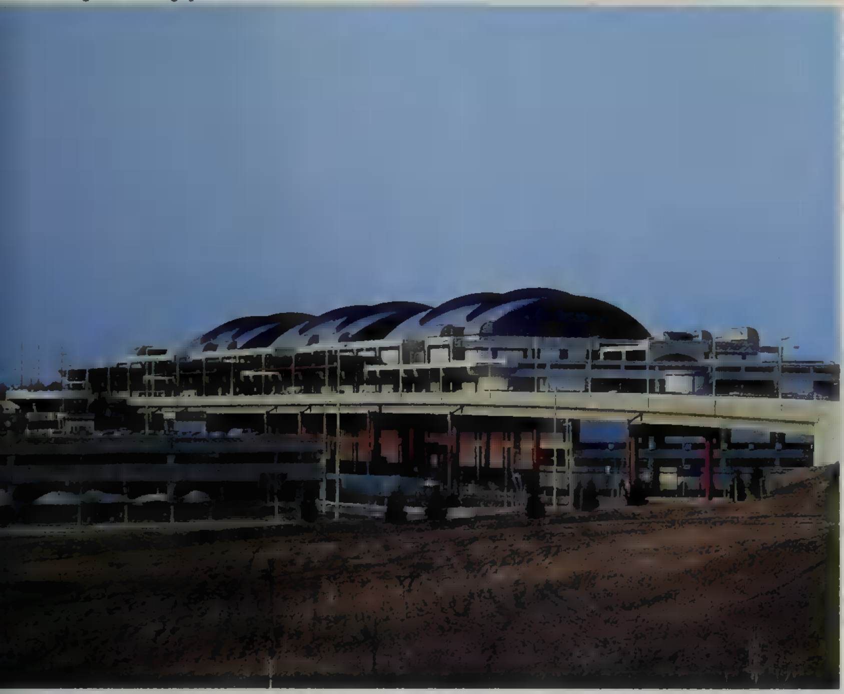


1. *Long-term parking*
2. *Covered moving walkway*
3. *Short-term parking structure*
4. *Landside terminal*
5. *Central services*
6. *Commuter-air terminal*
7. *Underground transit/baggage conveyor*
8. *Airside terminal*
9. *Control tower*

The 3.3-million square-foot complex is serviced by a new $220-million expressway. Departing passengers use upper ramps on both sides of the terminal (site plan, above); arriving passengers are picked up on grade. A moving ramp conveys passengers between ramps and a short-term parking structure and long-term lots.

Barrel-vault roofs mark atrium-like public spaces in the landside terminal (opposite 2,3). Red steel-framed canopies for departing passengers contrast with buff precast-concrete framing (opposite 4,5).

Timothy Hursley photos



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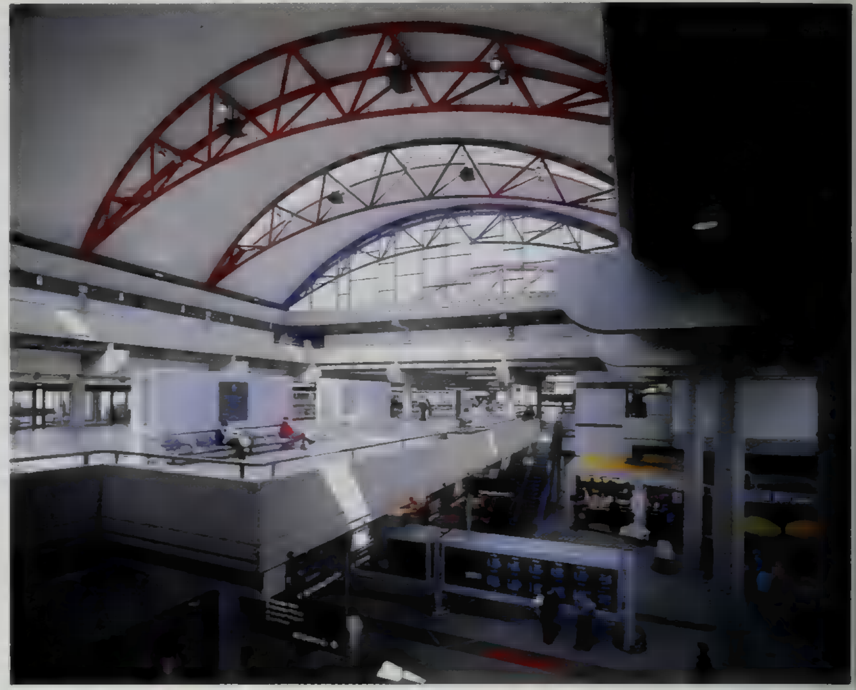
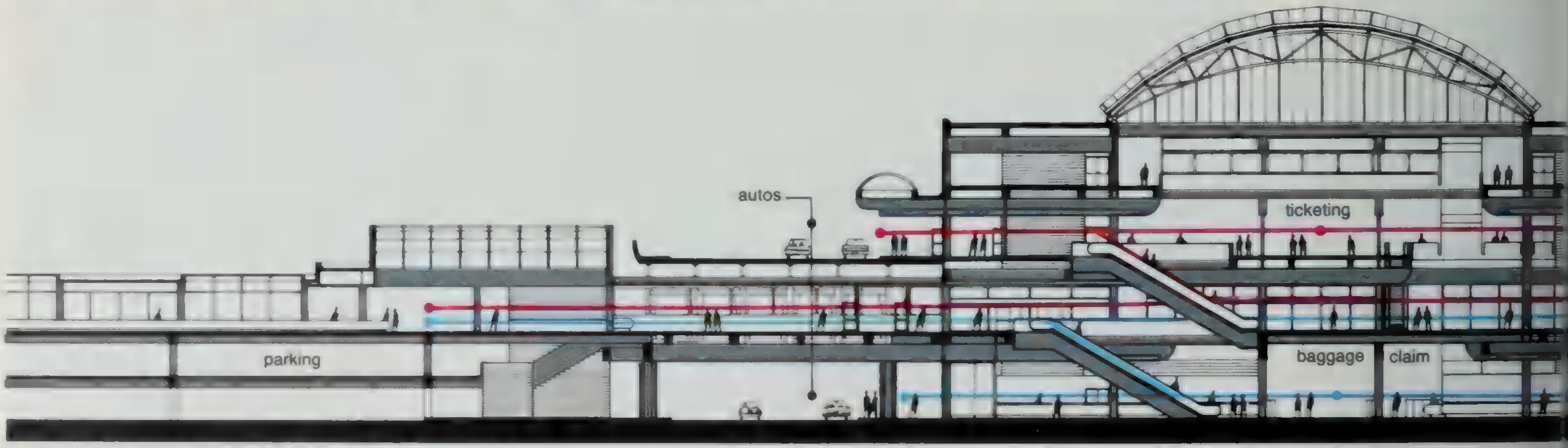
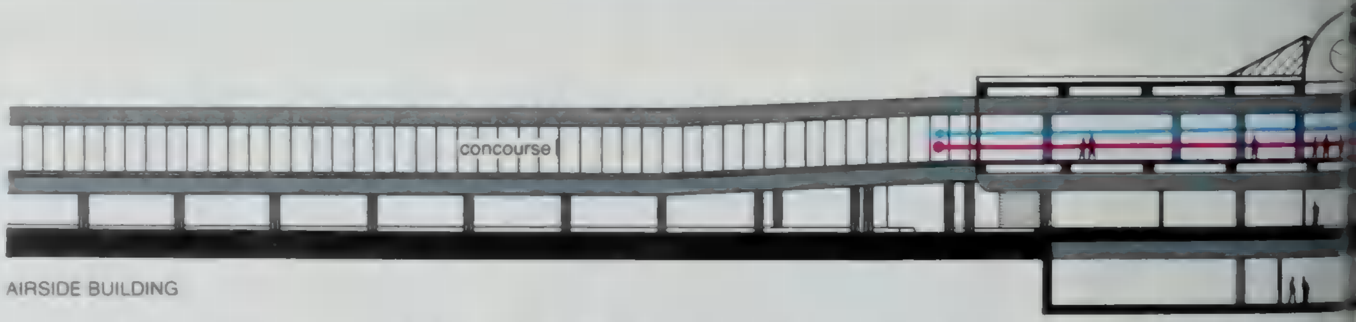




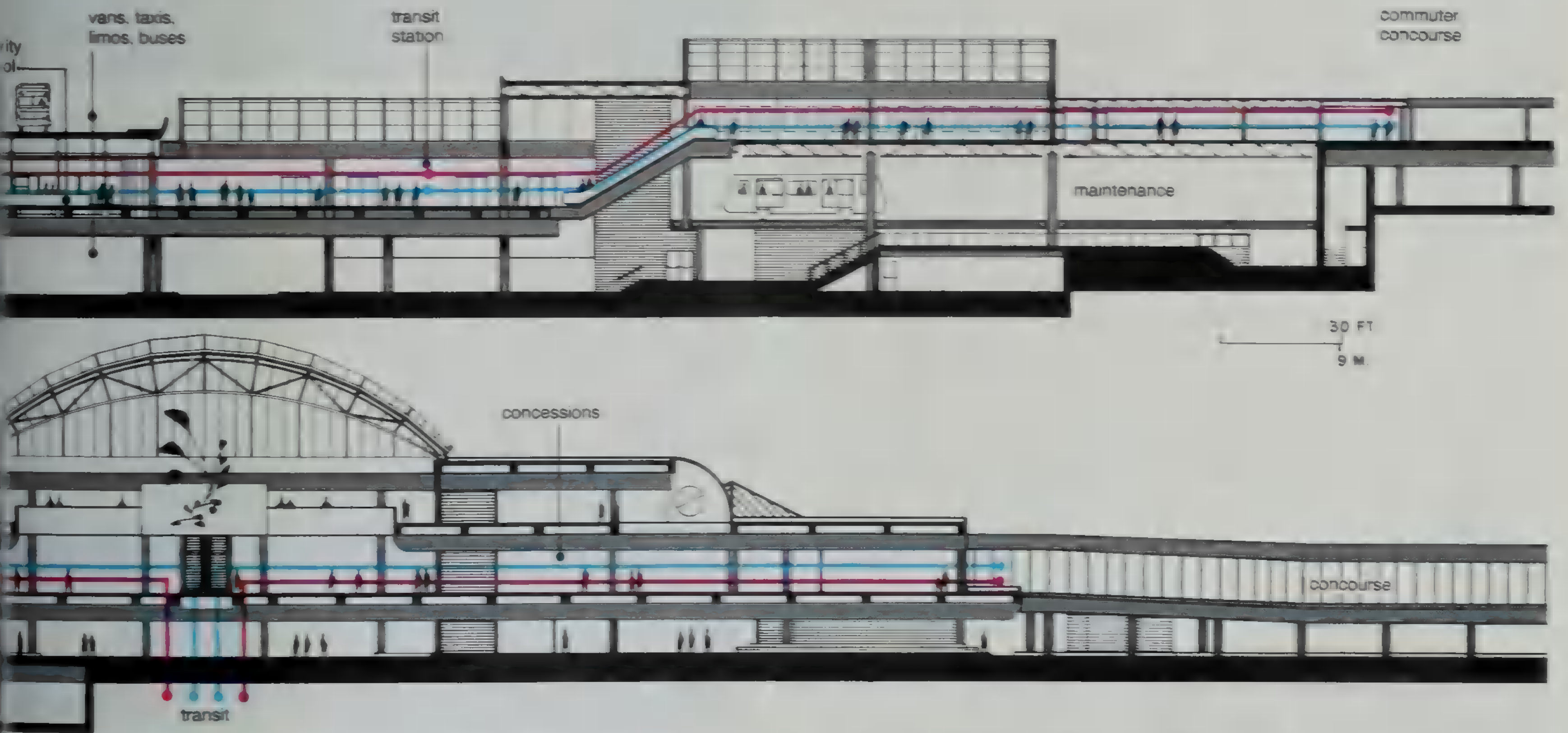
LANDSIDE BUILDING

● depart ● arrive



AIRSIDE BUILDING

The landside terminal (photo top right and top section) is dominated by a skylit vaulted roof supported by 120-foot-long steel trusses. Because of the [illegible] the terminal can be [illegible] roadway, where they are sheltered by 40-foot cantilevered steel canopies (pages 100-101), or ascend from parking to ticketing level before descending to security and the transit station to the airside terminal. (Commuter planes leave from the landside terminal.) Arriving passengers descend from the transit-station level to the baggage-claim area. The principal innovation of this hub airport is the X-shaped airside terminal. Double-lane aprons surrounding the concourse arms permit airplanes to move between gates and taxiways with less stop-and-start interruption, thereby saving fuel. Since 65 percent of passengers using the Pittsburgh airport are in transit to another destination and never actually enter the landside terminal, the architects made the airside terminal's core a mini-mall of restaurants and shops as a lay over diversion (top left and opposite left). Each concourse arm has three moving walkways (opposite right) connecting the 75 jet gates. TKA's updated master plan allows for expansion to as many as 158 jet gates. The commuter concourse can grow from 23 gates now to 48 gates.



edits
idfield Terminal Complex
ttsburgh International
rport
ttsburgh, Pennsylvania
wner: *Allegheny County—*
hn Graham, director of
pital projects; Peter Florian,
ief engineer of capital
ojects
chitect: *Tasso Katselas*
sociates—Tasso Katselas,
incipal-in-charge; George
Perinis, project manager; James Pappas, chief architect; Felix Cardella, III, Gavin Mellor, Jane O'Neill, C. Ayhan Ozan, Jose Heraud, Philip Rinaldi, John Foley, Wilmer Mutz, Greta Penn, Ronald Dellaria, Joseph Serrao, project team

Engineers: *Gensert, Bretnall & Associates (structural); Michael Baker, Inc. (civil/mechanical/electrical); Reynolds, Smith & Hills (mechanical/electrical)*

Consultants: *Breier Neidle Patrone Associates (baggage); Coffeen Fricke & Associates (acoustics); Irene Pasinski & Associates (graphics); Joseph A. Hajnas & Associates (landscaping); Theo Kondos Associates (lighting); Wackenhut (security)*

Construction Manager: *Mellon Stuart/Dick Enterprises*

General Contractors: *P. J. Dick Construction Company; Gust K. Newberg Construction Company; Mosites Construction Company*

"Snow-Capped" Symbol

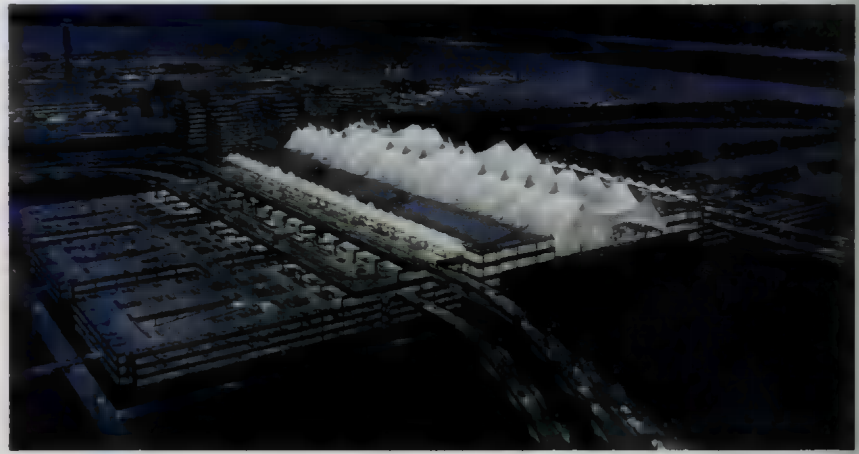
Currently under construction, Denver International Airport's landside terminal will be a tentlike port-of-call for 50,000 to 100,000 passengers a day.

Gateway and aerodynamic symbol, the landside terminal at the Denver International Airport harks back to the Eero Saarinen school of terminal design. Controversy over the terminal's cost—and whether it was needed—meant that visual drama was as important to the project's success as planning efficiency and economic feasibility. Says principal-in-charge-of-design Curt Fentress, of C. W. Fentress J. H. Bradburn and Associates, "[It] needed to be unique to Denver, a form that would signify the meeting of the mountains and the plains."

The sheer size of the 1.3-million-square-foot terminal and the need for a fast-track, low-maintenance solution led the architects to a fabric-roof design for the 900-foot by 240-foot Great Hall, the primary public space. It recalls another instant infrastructure landmark, the Haj Terminal in Jeddah, Saudi Arabia, by Skidmore, Owings & Merrill [RECORD, September II 1983, pages 74-75]. In Denver, the tented structure's peak-and-valley profile consists of double layers of 0.28-inch-thick Teflon-coated fiberglass supported by two rows of steel masts and reinforced against wind and snow loads by steel cables. Construction of the roof began last spring and should take one year to complete; minor repairs to damaged areas can be made by welding on a new layer of fabric. The light and airy effect of the tensile structure is more than just imagery—at night, 12 percent of interior light is transmitted, giving the complex a soft glow, and during the day the fabric transmits 10 percent of the daylight while preventing solar-heat gain. According to the architects, the material reflects 70 percent of direct sun, thereby reducing artificial lighting and cooling costs.

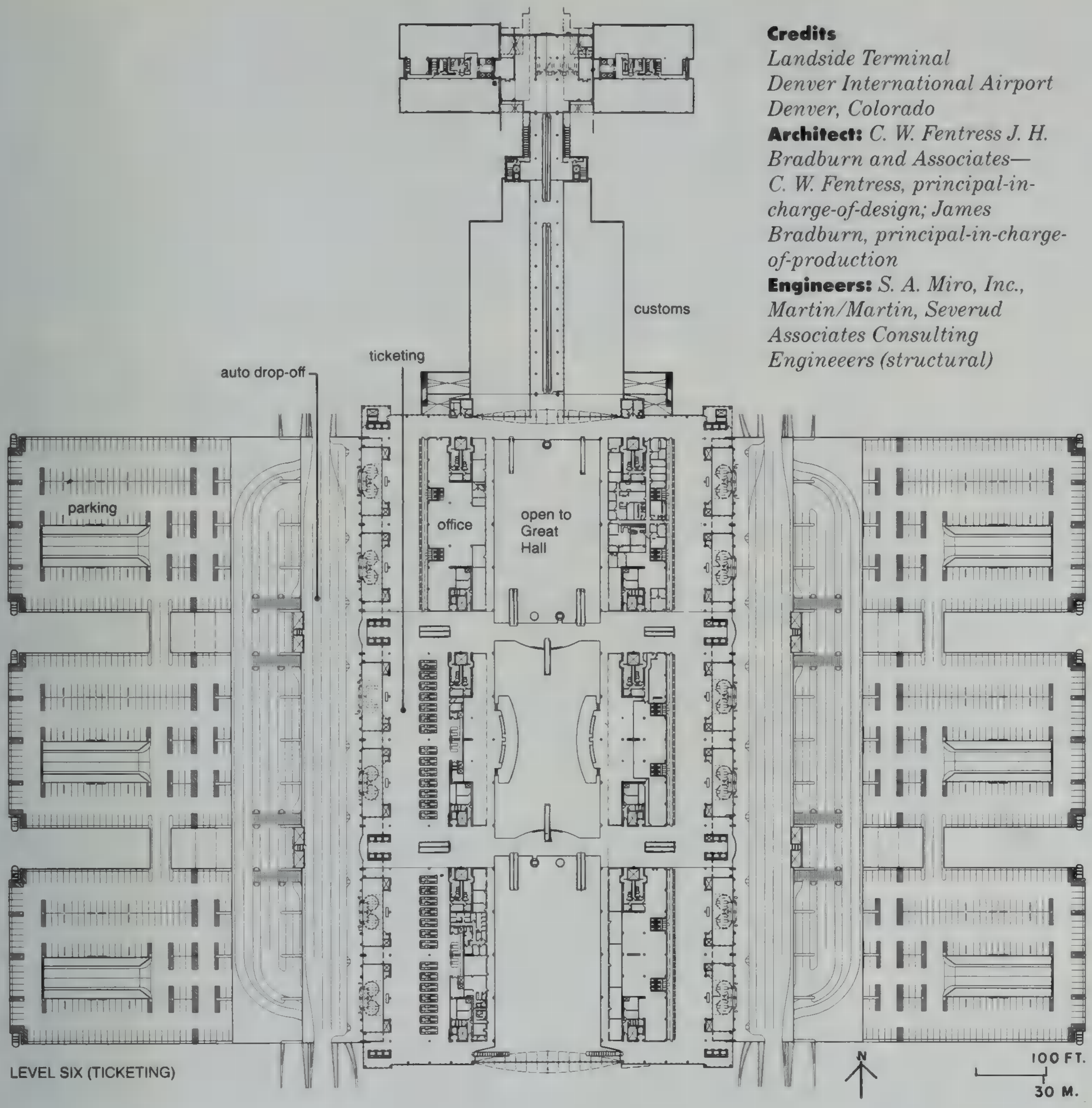
Like Pittsburgh (previous pages), Denver has a two-sided landside terminal. Public transportation and private automobile access, however, is stacked on three levels on both sides of the building (section opposite). Departing passengers ascend from parking and lower dropoff levels to level six for ticketing (plan opposite), where they join passengers dropped off by private automobile. They then proceed to the glass-faced, fabric-roofed atrium at level five, which provides sweeping mountain views, to pass through security before boarding the Automated Ground Transportation System (AGTS)—a "people mover"—at level four that connects to linear airside concourses. Arriving passengers will take the AGTS from concourses to the landside terminal and descend to baggage claim at level five before exiting at [illegible] ramp to level four for private-vehicle pickup.

[illegible] expected to be completed this year at a cost [illegible] structures and roadways. A master [illegible] modules linked by open spaces. [illegible] terminals, totaling 90 gates, designed by [illegible] build-out, the airport will have 240 gates.

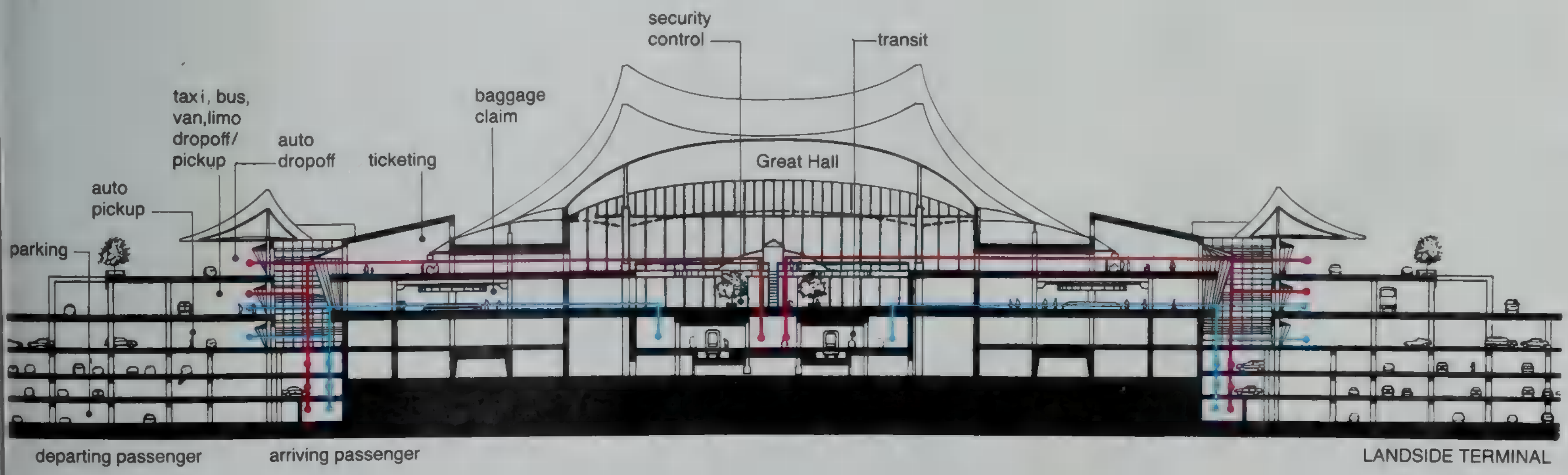


Robert Reck photo courtesy Birdair

Credits
Landside Terminal
Denver International Airport
Denver, Colorado
Architect: *C. W. Fentress J. H. Bradburn and Associates—C. W. Fentress, principal-in-charge-of-design; James Bradburn, principal-in-charge-of-production*
Engineers: *S. A. Miro, Inc., Martin/Martin, Severud Associates Consulting Engineeers (structural)*



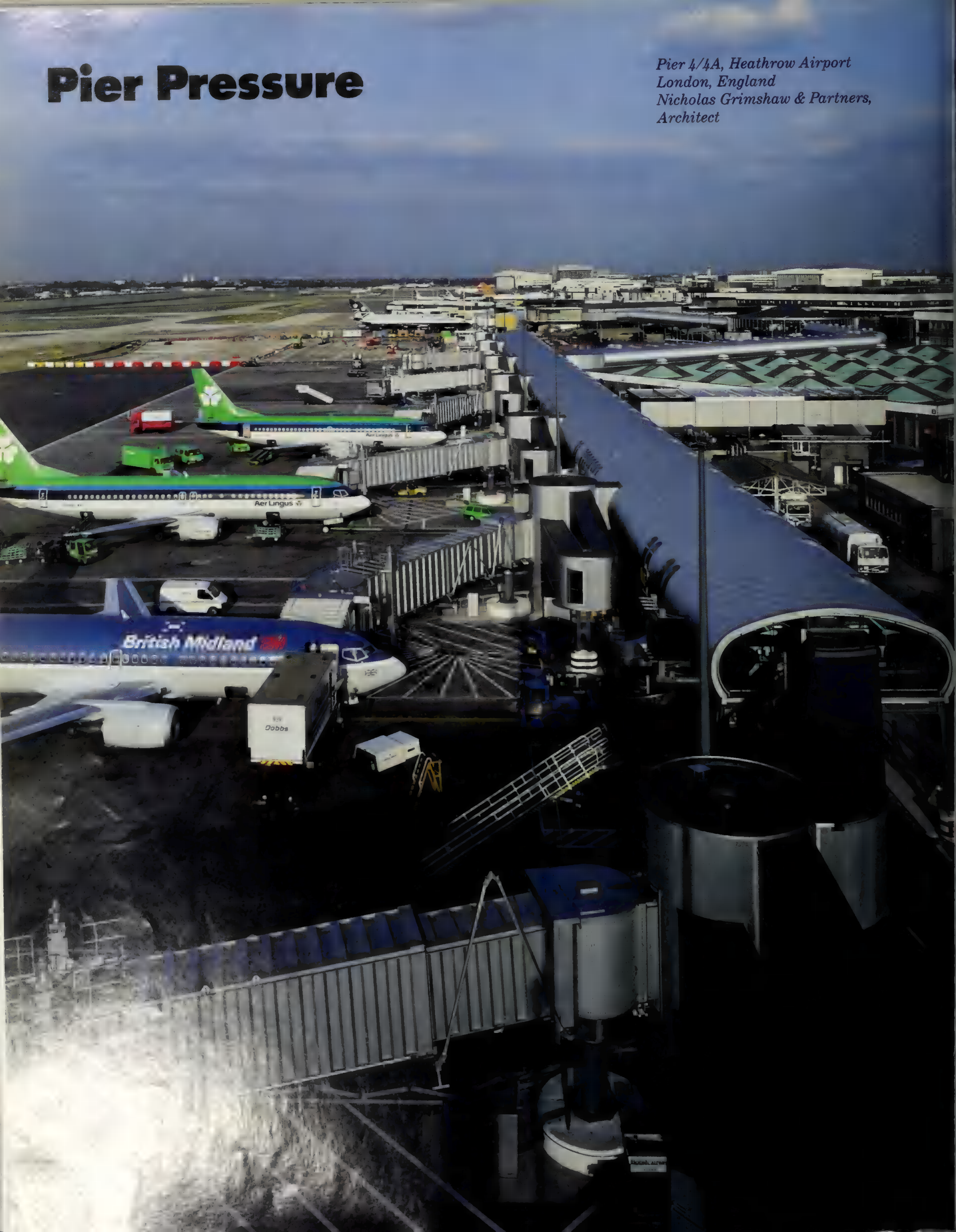
LEVEL SIX (TICKETING)



LANDSIDE TERMINAL

Pier Pressure

Pier 4/4A, Heathrow Airport
London, England
Nicholas Grimshaw & Partners,
Architect



ost airports start life with an ambitious masterplan that aims to permit orderly expansion. London's Heathrow, one of the busiest in the world, was not so lucky. Each addition—and there have been many over its 40-plus years of existence—is piecemeal, conceived on its own merits, designed to solve a small part of a larger problem.

The latest addition, Pier 4/4A, an improved passenger route adjacent to Terminal One, is no exception. Nicholas Grimshaw & Partners won the job in November 1989, perhaps as a consolation prize for having lost to Richard Rogers the chance to design the forthcoming major (but still piecemeal) addition to the airport, Terminal Five. Pier 4/4A is a temporary building intended to serve for just nine years, but Grimshaw's project director, David Harriss, has no doubt it will be in service longer. "The mentality is: let's solve this problem, rather than think 20 or 50 years ahead," he says. Such thinking is detrimental to the ease with which travelers use the airport. At one stage, for example, there was talk of integrating pier 4/4A with the planned Heathrow Express rail link to central London. The architects were told to drop the connection idea when the rail plan was put on hold. Now the Heathrow Express project is in gear again, but the opportunity to make an easy connection has been lost.

Each discreet addition can only obstruct the vision (literal and figurative) that once might have made the airport transparent to its users. The priority for the architects then becomes to create a hermetic environment that shuts out the mishmash all around; to provide unambiguous guidance; and, with luck, to invest a degree of esthetic delight for air travelers in that fragment of the airport environment over which they have some control.

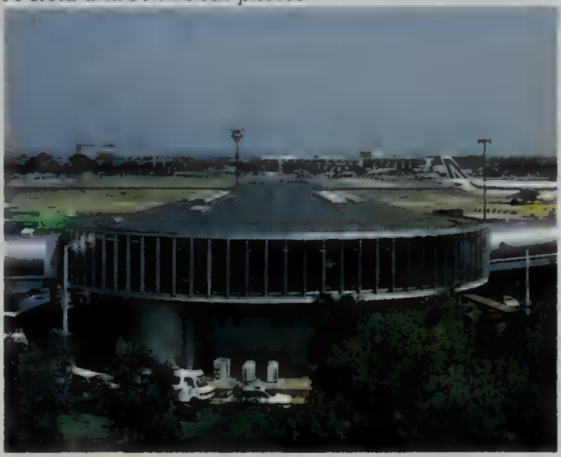
The architects had to satisfy numerous constraints in their attempt to create a humane environment. Pier 4/4A handles passengers headed for cities within Britain, who are divided into three sometimes-segregated categories according to security classification and ability to purchase duty-free goods. Limited space dictated that the pier be located directly above the circulation road that divides airside and landside. Bipedal steel columns slotted through some buildings, avoided others, crossed roads, and dodged below-ground services. The airport had to remain fully operational throughout construction. To accommodate this, parts of one aerial link were prefabricated and lifted into place at night. Like open-heart surgery, it may work when it's done, but it does not necessarily look beautiful.

As briefed by BAA, representing the owner, the new building would have comprised long, segregated, parallel passenger walkways. Grimshaw reorganized the routing to come up with a more open and flexible circulation pattern.

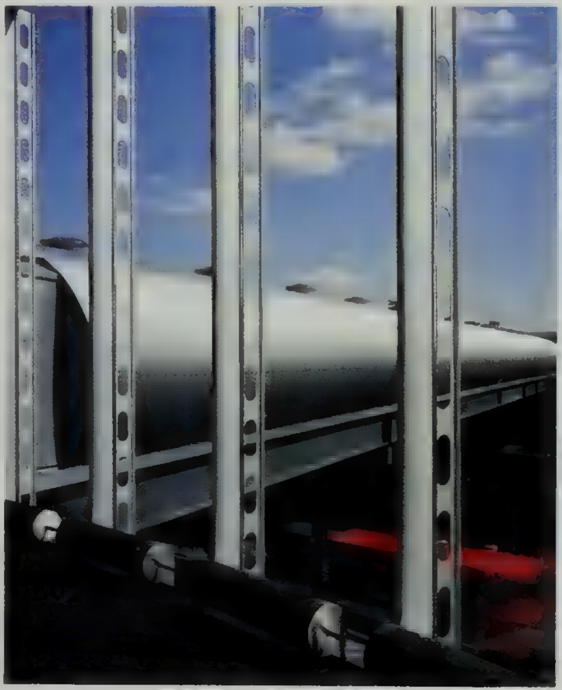
For both esthetic and practical reasons, the architects chose to use custom elliptical corrugated aluminum-clad sections to enclose both the pier and the links. The shape meets tight requirements for the preservation of existing visual and radar sightlines, and embodies a strong degree of lateral stability. Not least among the reasons for using such a distinctive form was the architects' wish to celebrate the romance of flight, using a technological esthetic seen both inside the tubes and out. Shiny aluminum interior cladding reflects light from lamps carried (along with other services) by a whimsical airfoil-section fixture. The building succeeds in looking not as planes do, but perhaps as they should. *Hugh Aldersey-Williams*

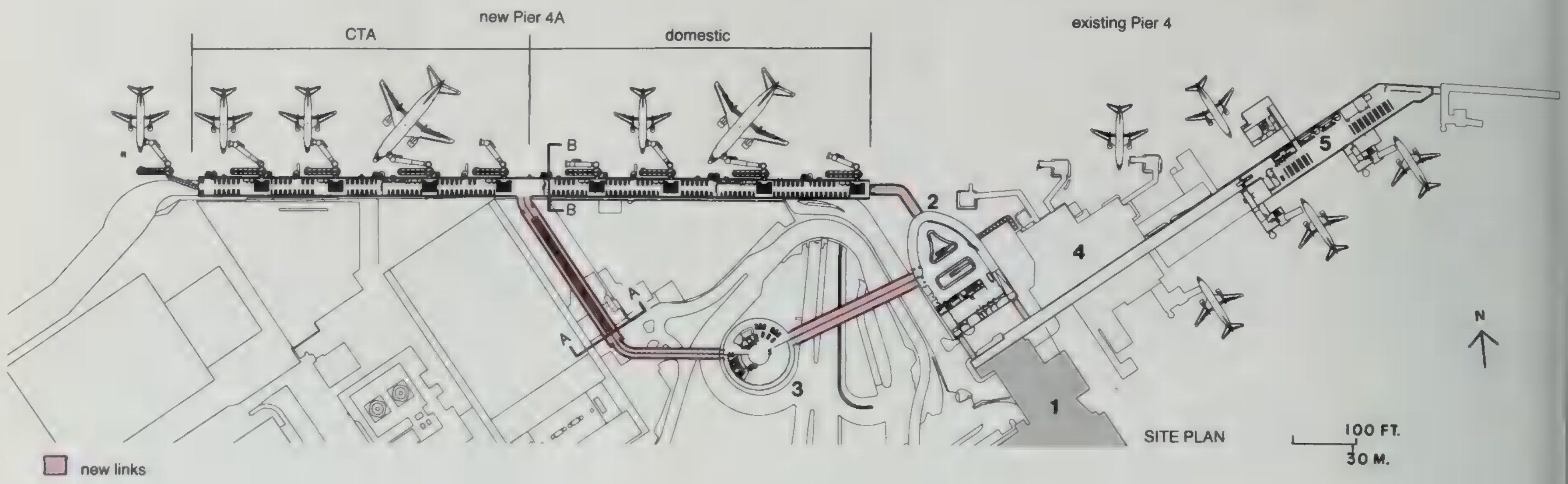
Hugh Aldersey-Williams is an architectural and design writer living in London.

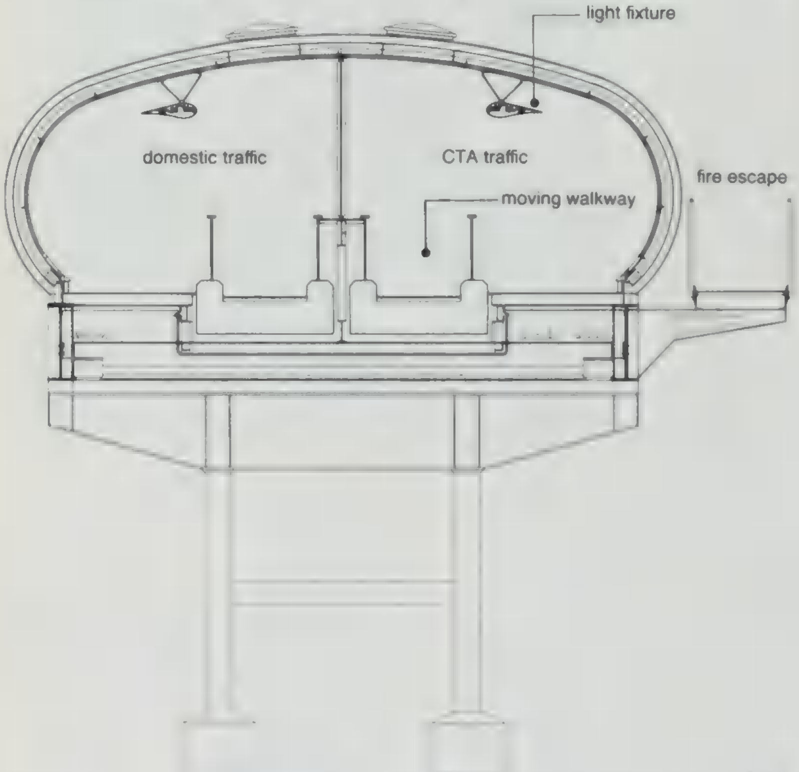
Jo Reid and John Peck photos



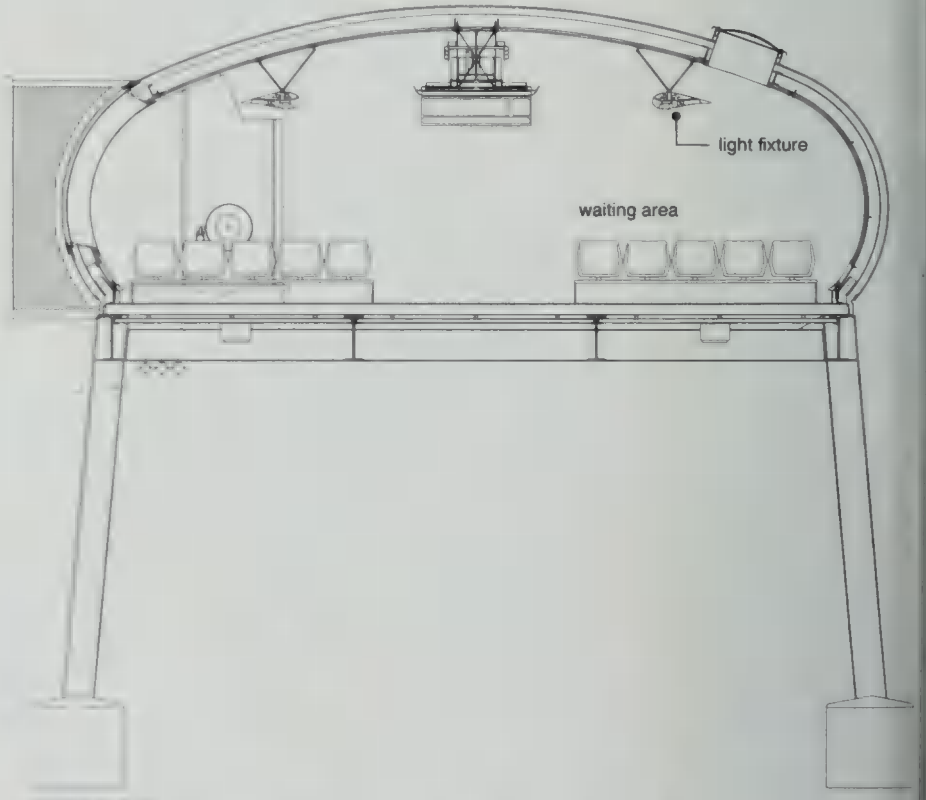
Top and bottom: The CTA building (for Common Travel Area) segregates passengers with differing security requirements and duty-free privileges. Opposite: Pier 4A looking east.





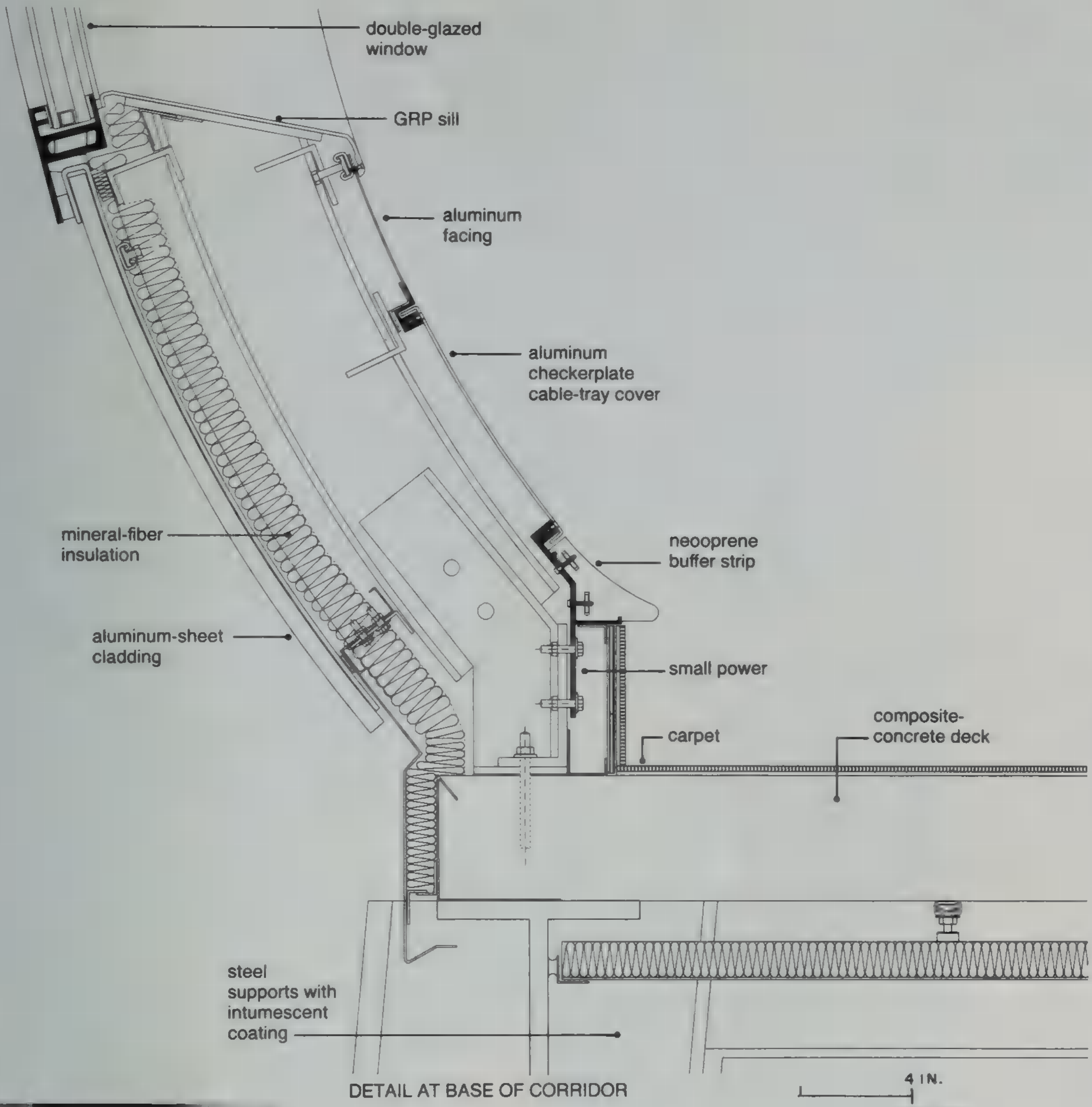


SECTION A-A

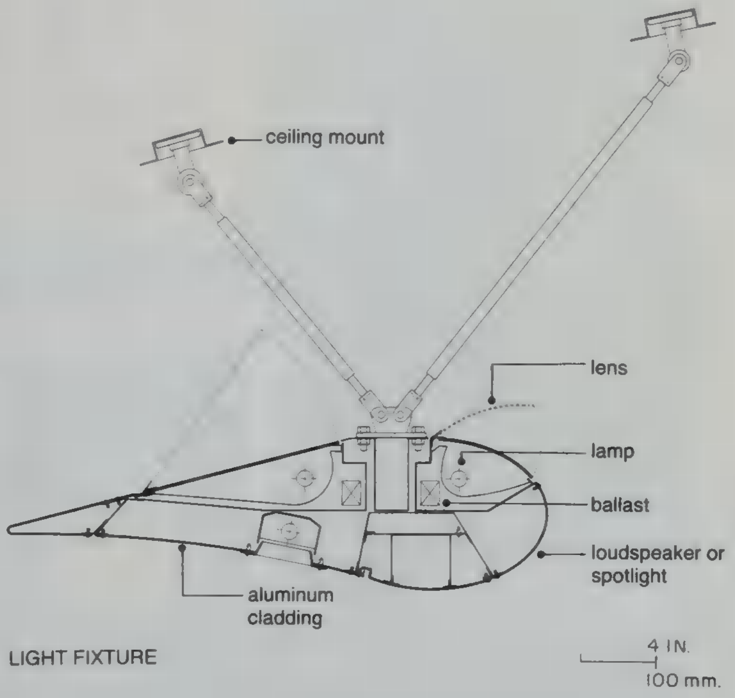


SECTION B-B

1. *Existing Terminal One*
2. *"Nose" building*
3. *CTA lounge*
4. *Shuttle lounge*
5. *Belfast lounge*



DETAIL AT BASE OF CORRIDOR



LIGHT FIXTURE

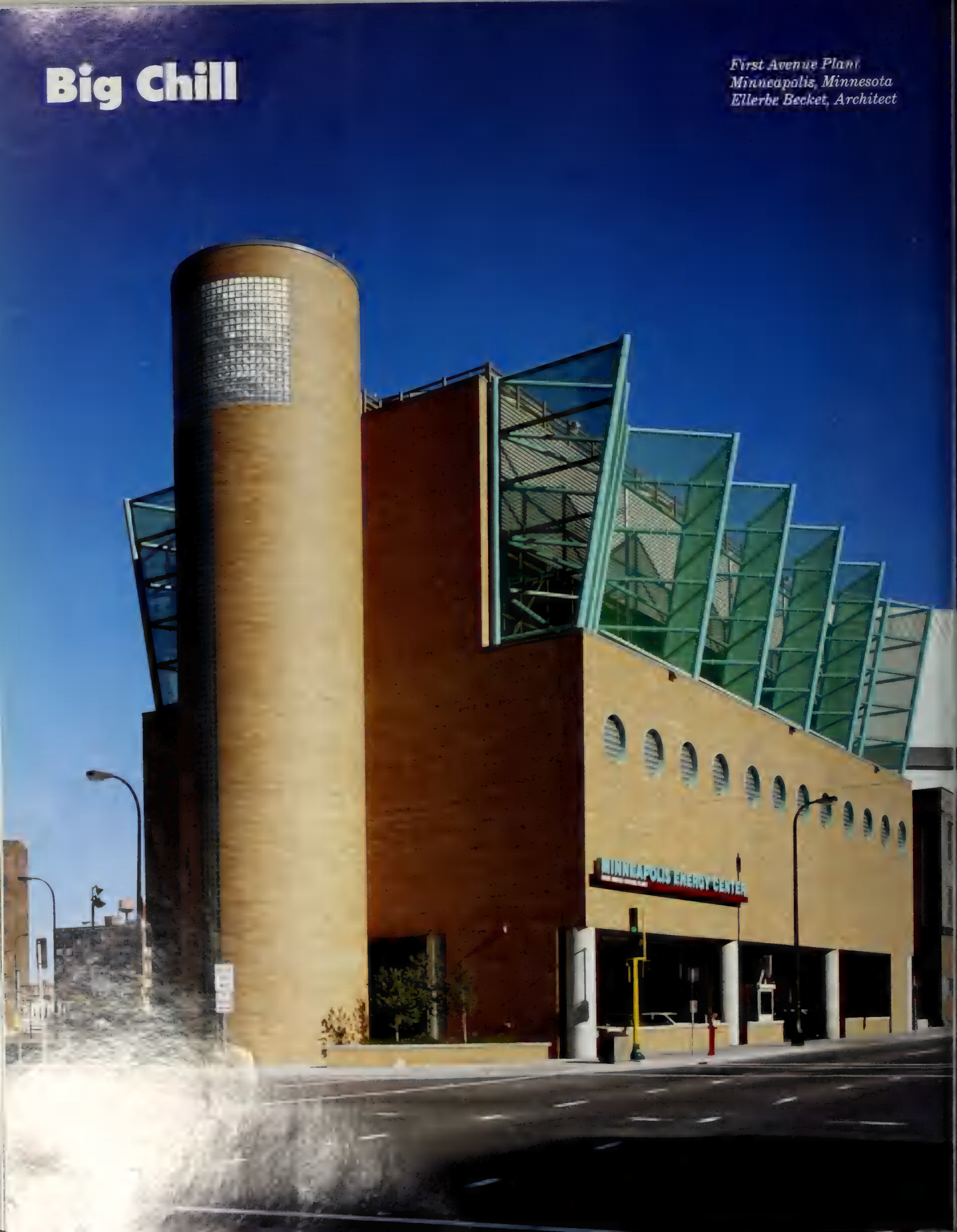
The ad-hoc appearance of the plan for Piers 4 and 4A (opposite) came about because the supposedly temporary addition is tucked where space was available. It handles passengers in three domestic categories. Northern Ireland and the Channel Islands are considered part of the Common Travel Area (CTA). Baggage may be examined and passengers may indulge the British obsession for buying duty-free goods. The "nose" building segregates regular domestic passengers from CTA passenger and travelers to and from Belfast, for whom extra security requirements apply. An outer corridor in the "nose" building directs CTA passengers through a link to the CTA lounge (containing a snack bar and duty-free shopping) to gates. Arriving CTA passengers claim baggage in the "nose."

So that the links and piers would not exceed minimal sightlines, they were framed in low, elliptical rolled-steel hoops (the corrugated metal cladding supplies rigidity). Heat pumps serve the departure lounges through a suspended boom, avoiding lowered ceilings. Double-glazed, gasketed windows follow the profile of the piers (opposite bottom). Winglike light fixtures (left) provide up- and downlight and connections for public address and emergency lighting.

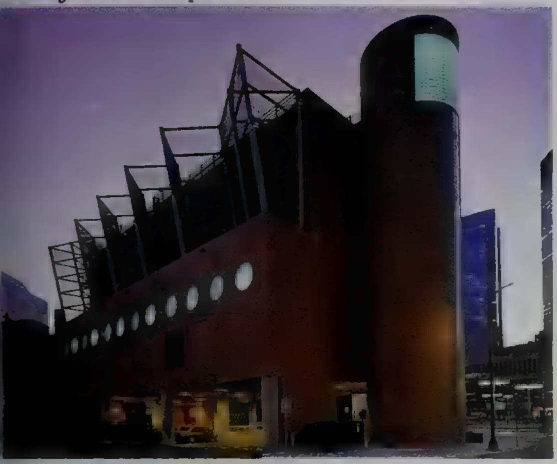
Credits
Pier 4/4A, Heathrow Airport London, England
Owner: *Heathrow Airport Ltd.*
Architect: *Nicholas Grimshaw & Partners, Ltd.—David Harriss, project director, Hin Tan, project architect*
Engineers: *B. A. A. Consultants (structural/mechanical/electrical/plumbing/electronics)*
Consultants: *W. T. Partnership (quantity surveyors)*
General Contractor: *AMEC Projects, Ltd.*

Big Chill

First Avenue Plant
Minneapolis, Minnesota
Ellerbe Becket, Architect



© Terry Wilkinson photos

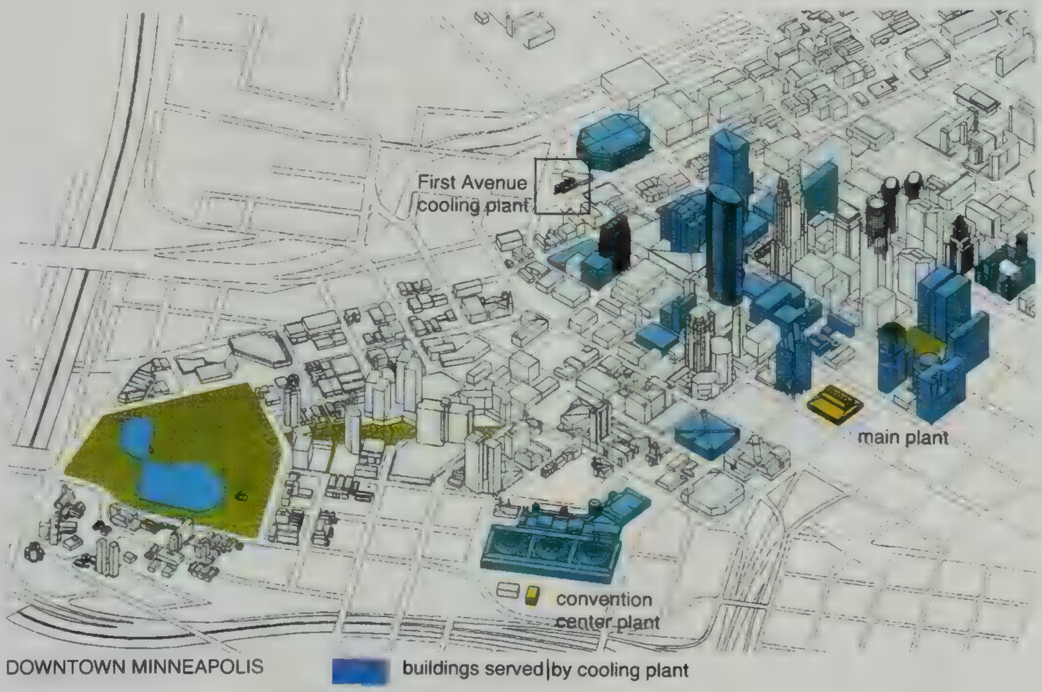


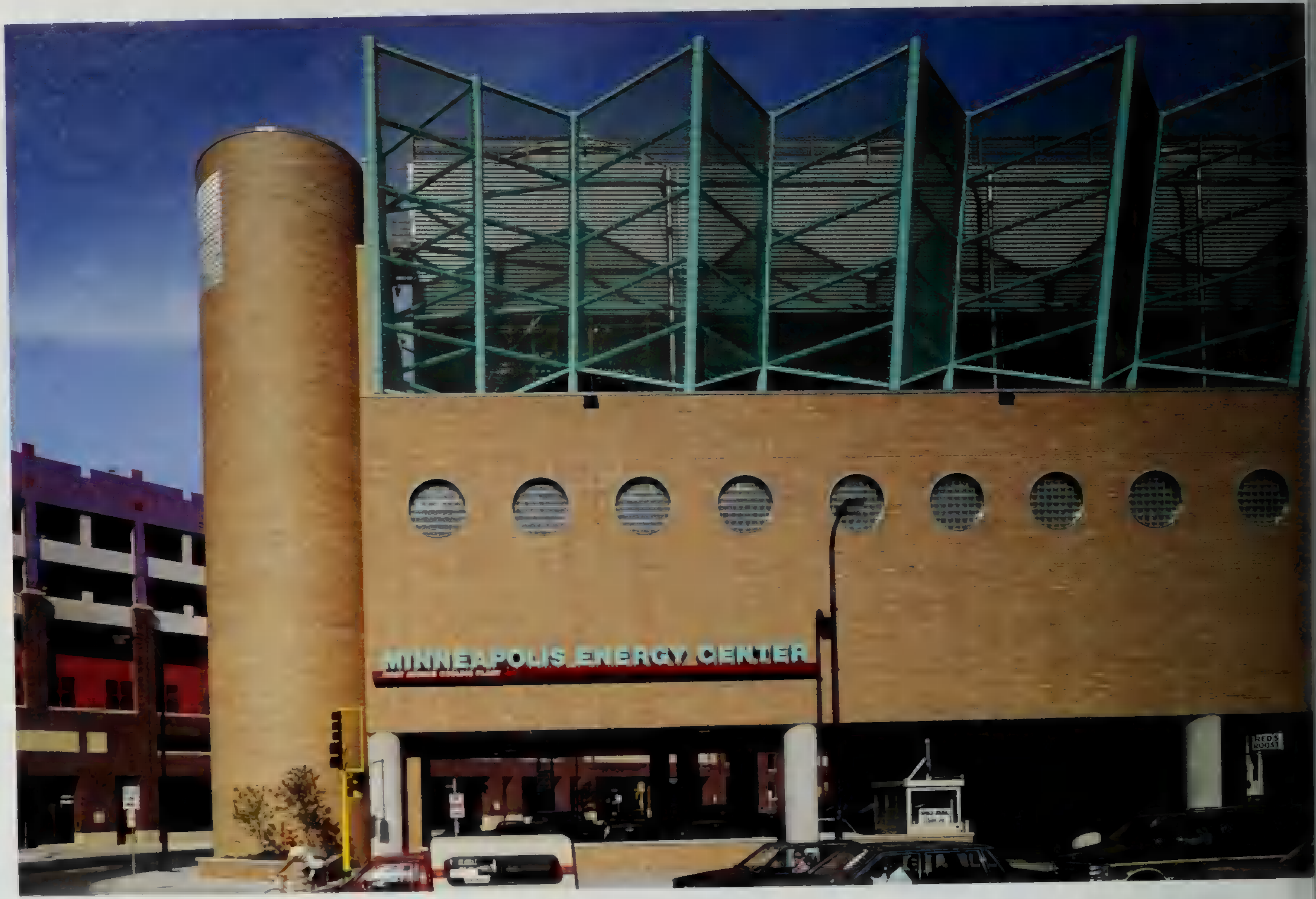
Nearly dwarfed by a massive enclosed arena to the north (white structure, right in photo opposite) and a parking garage for several thousand cars to the southwest, Ellerbe Becket's design for this new central cooling plant manages to hold its own by a playful expression of the large-scale equipment inside. The round tower holds an elevator and the primary stairs while serving the visual function of turning the corner at an awkward street juncture.

Part of a central heating and cooling network serving downtown Minneapolis, Ellerbe Becket's new cooling plant currently contains two steam-turbine-driven chillers providing 12,000 gallons of chilled water per minute (or 6,000 tons of cooling) to nearly two million square feet of office space in those buildings indicated in blue in the aerial perspective below. Room for a third chiller will take care of future demand. The new facility is built over an open garage at street level in air rights leased from a parking operator. This garage, along with many other commuter parking facilities in other garages and on empty lots in the area, helps keep cars out of downtown (right in aerial perspective), which is linked by elevated walkways soon to be supplemented by buses.

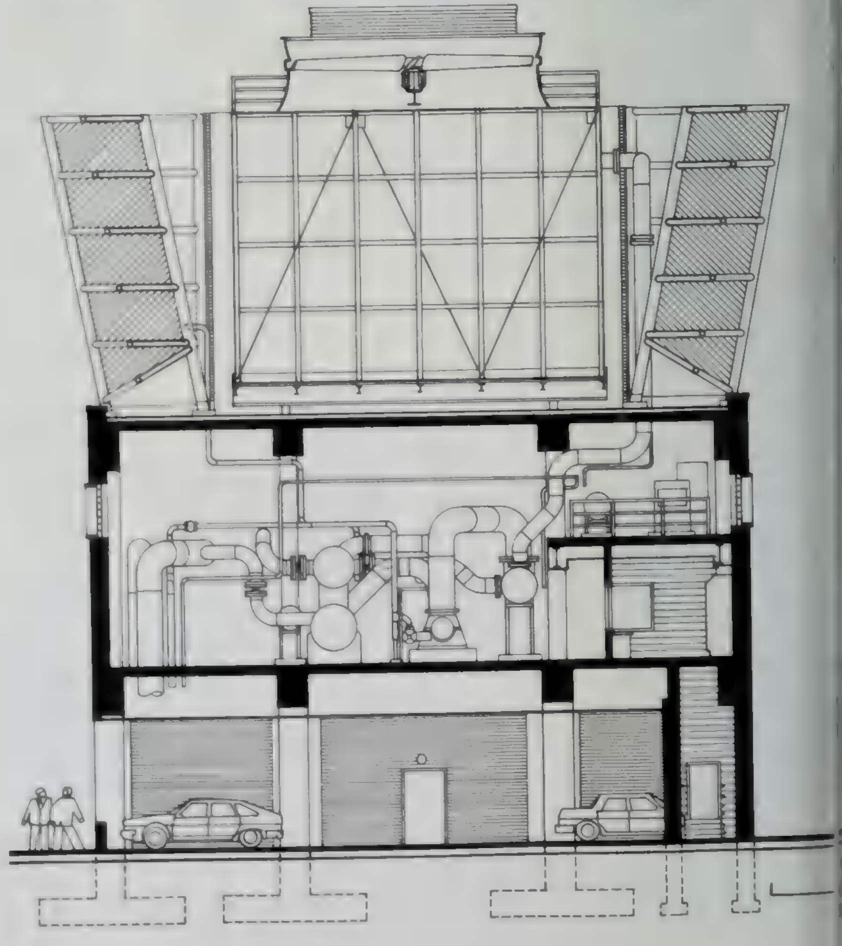
While basically a utilitarian structure, the plant does more. Contradicting its mechanical nature, it brings a playful note to an area burdened with large impersonal buildings and empty lots. The garage's open base allows the heavy reinforced-concrete structure, enormous chiller units, and cooling towers to ride lightly above it. The effect is enhanced by the building's open-screen "crown." At the same time, the building fills in one of the gaps along First Avenue (right in photo opposite) created by earlier random demolition of older low-rise brick warehouses. The remaining warehouses are being converted into galleries, restaurants, and nightclubs, a signal that streetlife is being reborn here. In recognition of the original streetscape, the plant's facade aligns with remaining building facades, picking up their flavor with its ironspot-brick cladding, and respecting their scale by stepping back at the height of adjoining cornices.

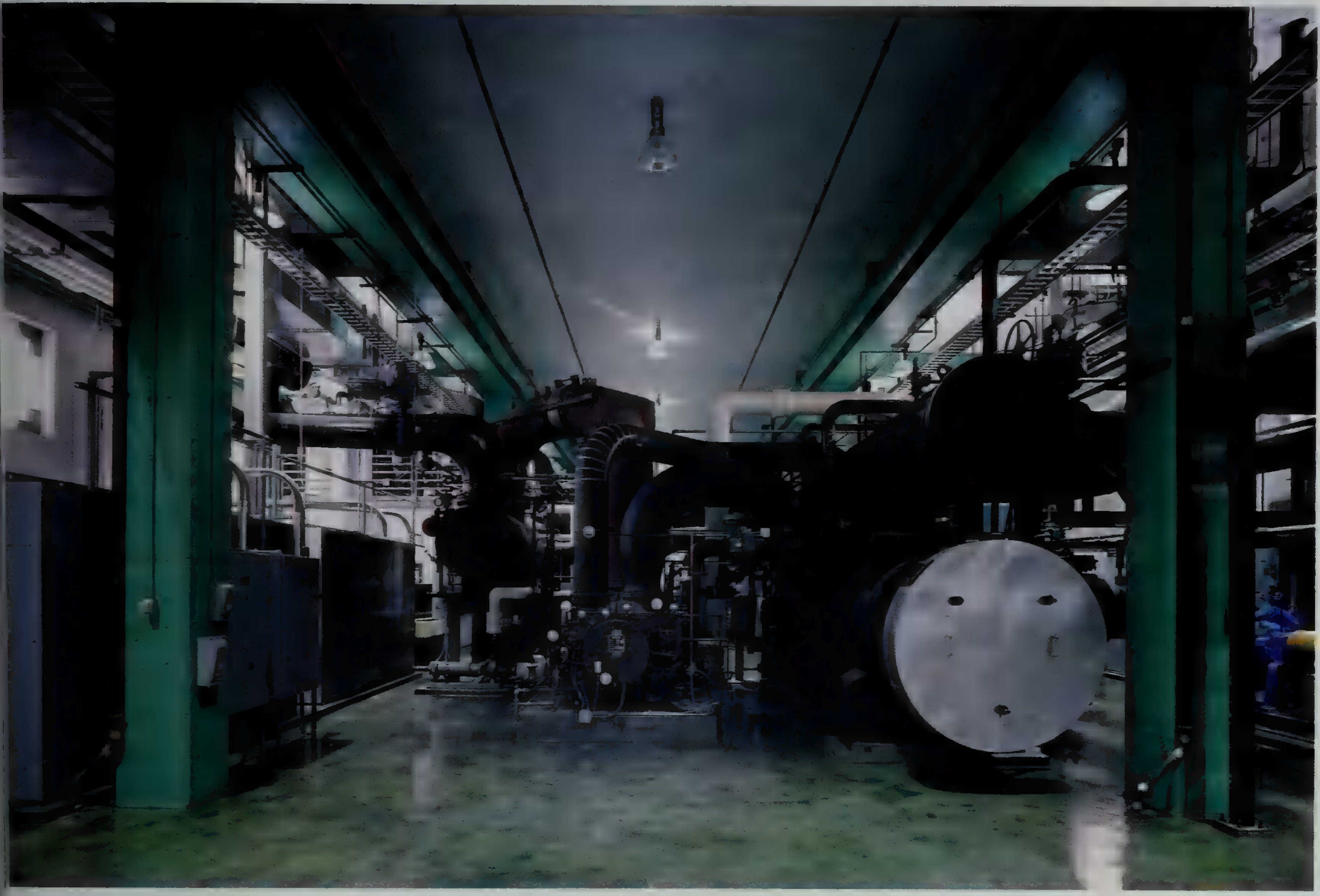
Does a central facility deliver cooling more efficiently than individual chillers? Yes, because the plant is owned by a private company that must provide cooling more efficiently than individual building chillers could, points out Ellerbe project manager Douglas Maust, who is also an engineer. He adds that the cooling lost in transit of the 40F water is minimal due to the region's low ground temperature of 50F. The current low cost of gas used as the energy source produces additional savings. The budget for the building, with its 9,000 square feet ground area, was $2 million excluding mechanical equipment. *Charles K. Hoyt*

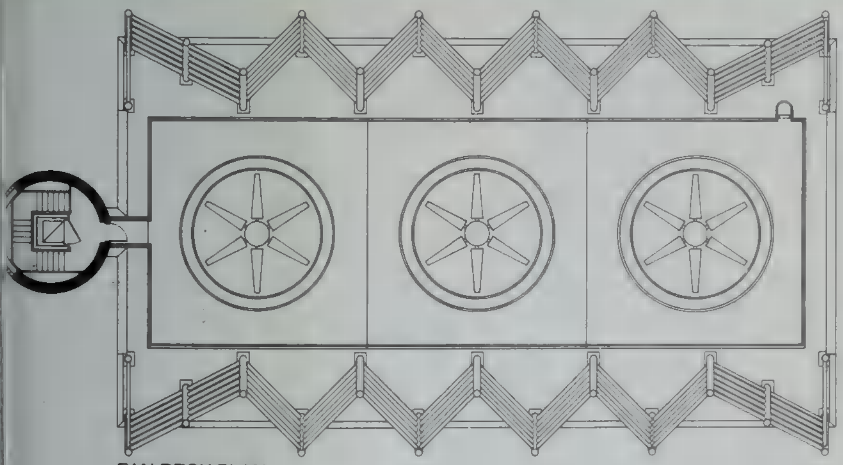




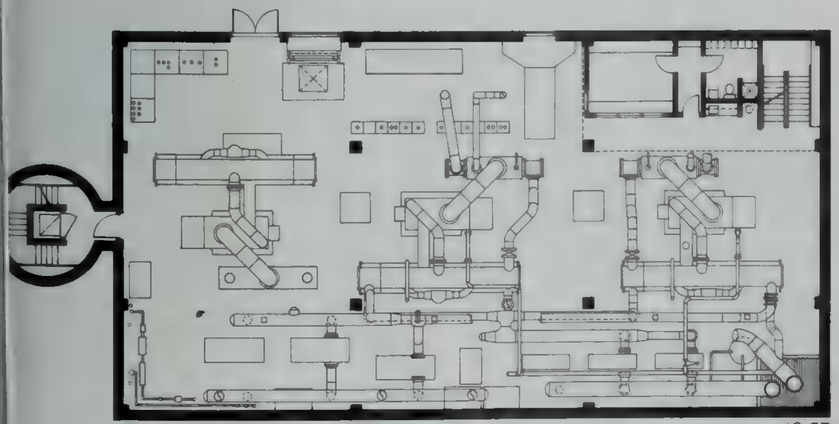
Straightforward planning provides a parking garage on the street level, a mechanical room for the chillers on the second floor, and cooling towers on the roof. A lone worker monitors chiller operation from a soundproof control room served by adjacent lockers (right in plan and section). A mezzanine above is used for auxiliary pumps, control units, and refrigerant storage. The angled shape of the steel pipe and vinyl-covered chainlink crown of the building, which screens the cooling towers, came from more than a desire for dramatic effect, [illegible] spirit of the machine processes involved," according to project architect Bruce Paulson. "We tried a straight-wall solution, but there was no way to support it without the required bracing interfering with the towers. By angling the structure, it could be self-supporting except for connections to the concrete end walls." The open mesh allows for free passage of the massive amounts of air needed in the evaporative process. The interior of the machine room (photo opposite) is painted concrete and concrete block lit by the round glass-block windows. Extra space awaits a third chiller.







FAN DECK PLAN

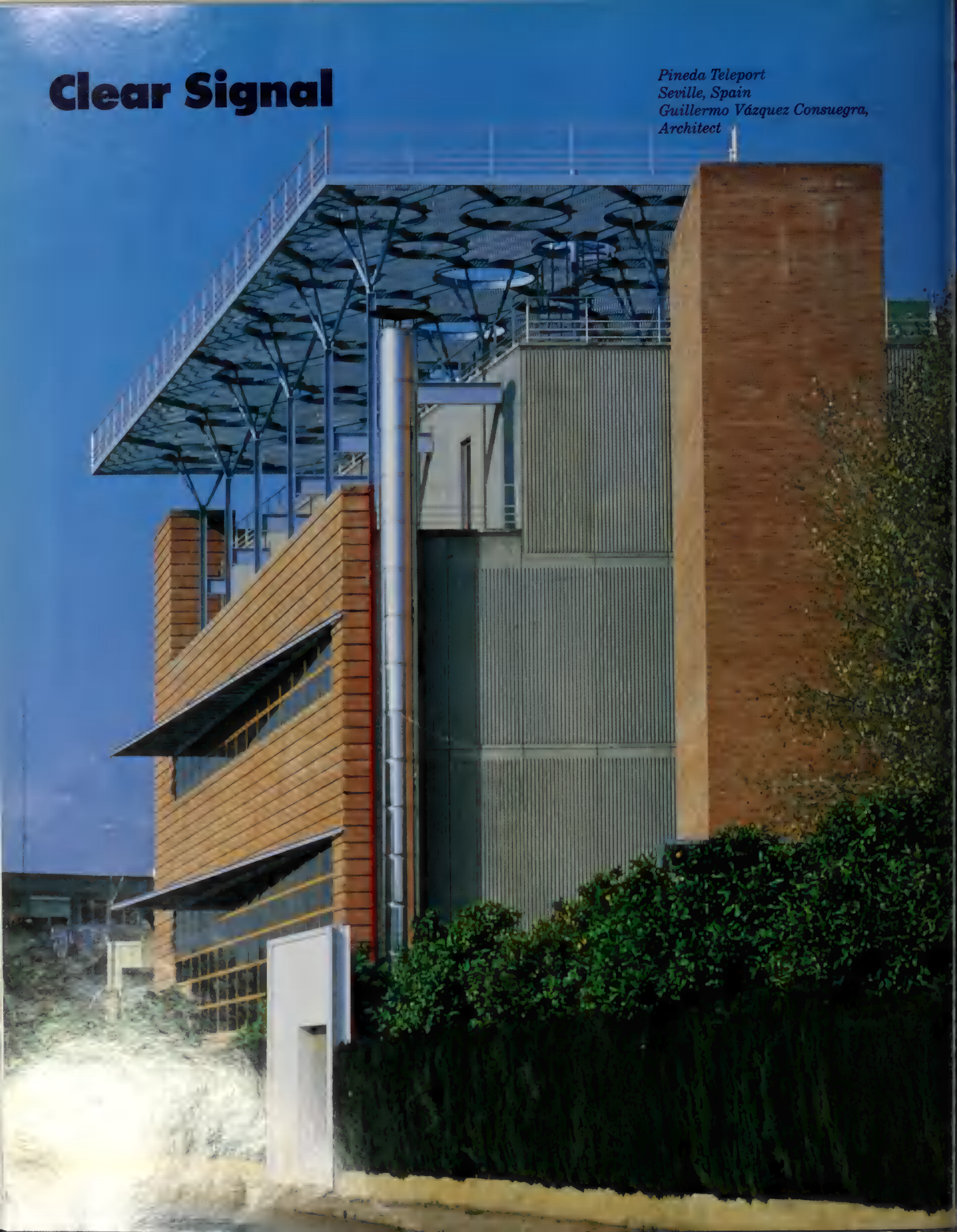


EQUIPMENT ROOM PLAN

Credits
First Avenue Cooling Plant
Minneapolis, Minnesota
Owner: *Minneapolis Energy Center*
Architect and Engineer: *Ellerbe Becket—Douglas Maust, project manager; William Huntress, project designer; Calvin Olson, chief architect; Bruce Paulson, project architect; Gary Tosel, project mechanical engineer; Cliff Ingles, project structural engineer; Allan Wenzel, project electrical engineer; Theodore Lee, project landscape architect*
General Contractor: *M. A. Mortenson Company*

Clear Signal

Pineda Teleport
Seville, Spain
Guillermo Vázquez Consuegra, Architect



he Pineda Telephone Building on the outskirts of Seville, designed by Guillermo Vázquez Consuegra for the Spanish National Telephone Company (Telefonica), proves to what extent quality design is now public policy in Spain. The architect has invented a defining image for a relatively new building type, the satellite-signal receiving station. The design typifies what is often referred to as the "tectonic" character of contemporary Spanish design in its contrasts among brick, concrete, and steel. Symbolically and functionally, the design's crowning feature is the teleport deck, the horizontal metal platform to which sending and receiving devices are attached. It represents a functional improvement over the usual mounting of satellite dishes directly on conventional flat roofing, in which the roof's integrity is constantly threatened by the penetrations of antenna supports and foot traffic from routine maintenance. The Pineda's deck permits complete flexibility in mounting and changing antennas and other equipment. And its visual permeability seems an appropriate emblem of the ephemeral signals it receives. It's a suggestively fragile and novel image for this space-age earth station.

The building under the teleport, containing the center's switching quipment and personnel, is just as expressively designed. The brick acades on three sides of the trapezoidal structure—richly modeled vith projecting horizontal bands that recall some of the early buildngs of Frank Lloyd Wright—wrap a second, recessed enclosure of ertically banded precast-concrete panels. A brick stairtower, linked y glass bridges, projects like the dot of an exclamation point. Interirs follow Telefonica's utilitarian standards, and mechanical, lectrical, and lighting design were contracted for separately, limitng Vázquez Consuegra's involvement to details of lobby and stairs.

he Pineda building is not the only exemplary technical facility that elefonica has recently commissioned. Well-received projects have een completed in Barcelona [RECORD, August 1992, page 108] and at he fairgrounds in Seville. Vázquez Consuegra himself just finished nother teleport project in the historic southern port city of Cadiz.

Vhy is so much importance given to such structures in Spain? In the rst place, certain public authorities are the principal patrons of ood architecture here. Indeed, many of the country's internationlly admired recent buildings fall into apparently curious clusters: ranches of the Bank of Spain, medical clinics in the province of Catlonia, or buildings for Telefonica. The explanation is that each of ese agencies has within it an enlightened patron of architecture. This public patronage is also why Spain's public housing ranks mong the best in Europe—Vázquez Consuegra's considerable reputation before the Expo was based on his housing projects in Seville, adrid, and Cadiz [RECORD, June 1990, pages 47-48]—while luxury ousing by private developers is generally of a far inferior quality.)

ut most importantly, projects like Pineda are the most visible components of largely invisible infrastructural improvements and the assive investments they consume. It is no accident that the Pineda eleport is prominently sited beside a busy artery in a prosperous burb of the city. The cost of the building, as Vázquez Consuegra eminded his client when budget questions arose, represents only 20 ercent of the budget for the equipment it houses, and a fraction of e cost of Seville's new digital fiber-optics network. Vázquez onsuegra's unwritten assignment in designing Pineda was to give mpelling architectural form to the stunning technical advances at are propelling Spain into the 21st century. *David Cohn*

avid Cohn is a freelance writer based in Madrid.

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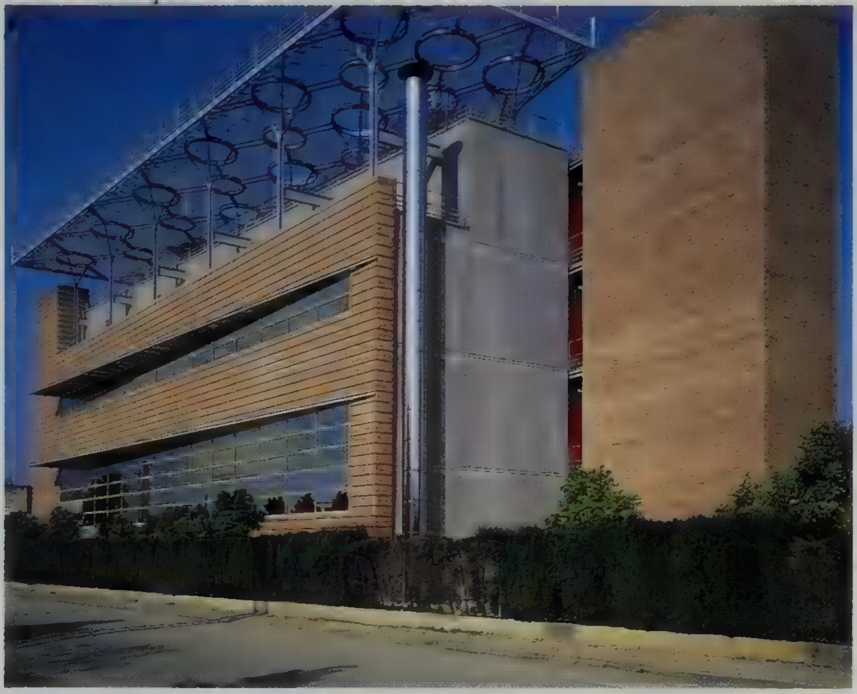
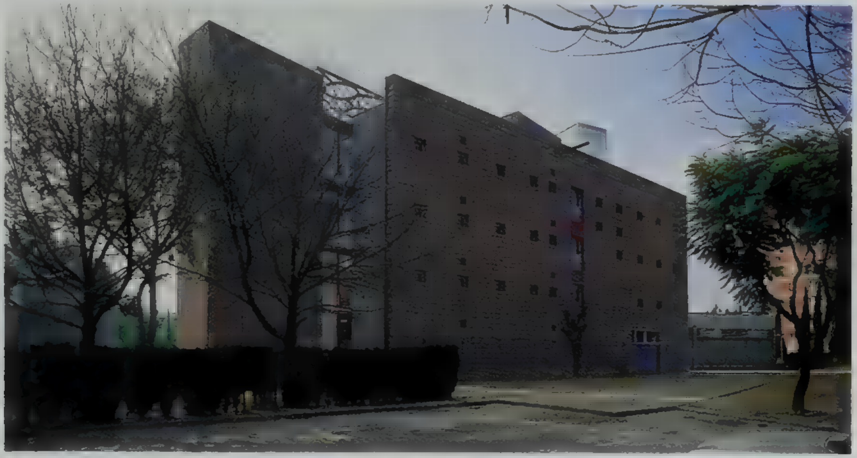
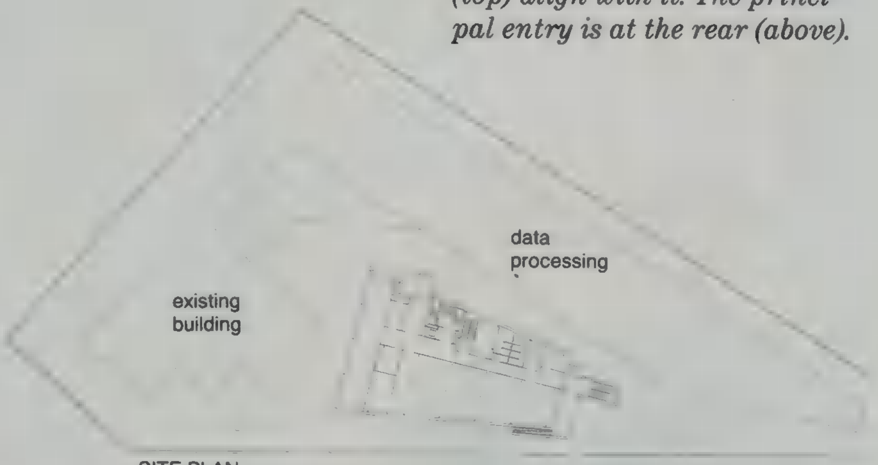
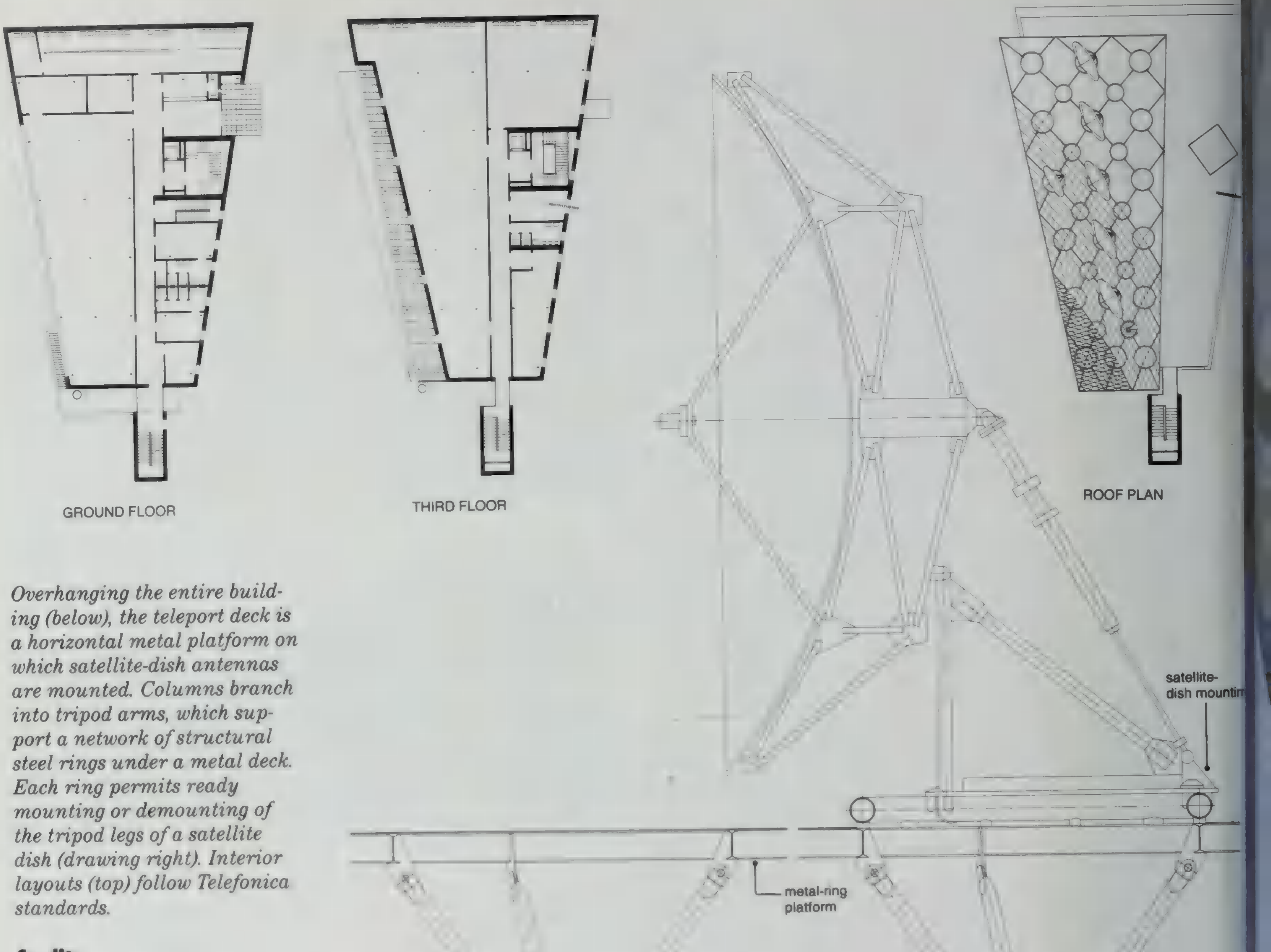




While the bulk of the Pineda Teleport angles away from the street (site plan), metal "eyebrows" and the teleport deck (top) align with it. The principal entry is at the rear (above).



SITE PLAN



GROUND FLOOR

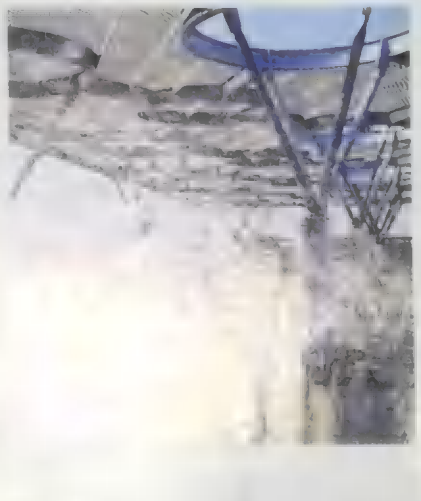
THIRD FLOOR

ROOF PLAN

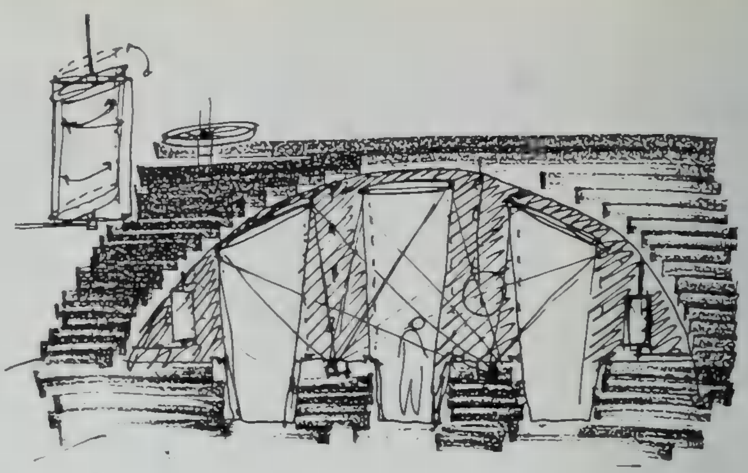
SECTION AT ANTENNAE PLATFORM

Overhanging the entire building (below), the teleport deck is a horizontal metal platform on which satellite-dish antennas are mounted. Columns branch into tripod arms, which support a network of structural steel rings under a metal deck. Each ring permits ready mounting or demounting of the tripod legs of a satellite dish (drawing right). Interior layouts (top) follow Telefonica standards.

Credits
The Pineda Teleport
Seville, Spain
Owner: *Spanish National Telephone Company (Telefonica)*
Architect: *Guillermo Vázquez Consuegra—Marcos Vázquez Consuegra, Fátima Pablo-Romero, collaborators*



Down the Tube



1

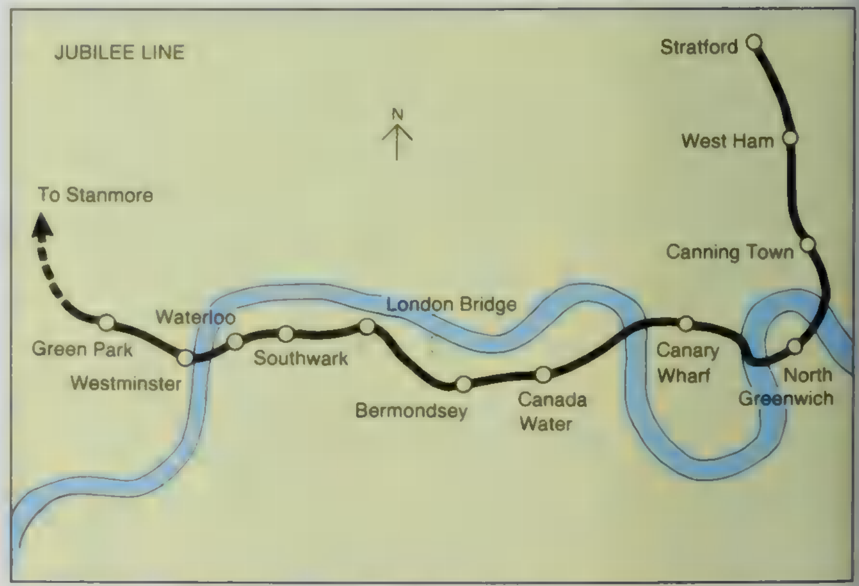
The London Underground is the world's oldest urban transport network and one of the most complex. It also has a distinguished architectural heritage. It began as separate companies that were unified during the 1920s largely through design guidelines established by then managing director Frank Pick, acquiring its modern identity epitomized by the famous roundel symbol. Pick also commissioned Charles Holden to design new suburban stations. While these are now much-loved landmarks, London Underground has done little to continue this pursuit of excellence in the intervening 60 years.

A $2.7-billion plan to extend the Jubilee Line south and east from central London in a loop to Canary Wharf and Greenwich promises to make amends. The five-year project has some government funding and now awaits finalization of private investment arrangements (some from the beleaguered owners of Canary Wharf). Then site work could begin on 10 miles of track (mostly underground), 11 new station stops (one exists), and many other buildings.

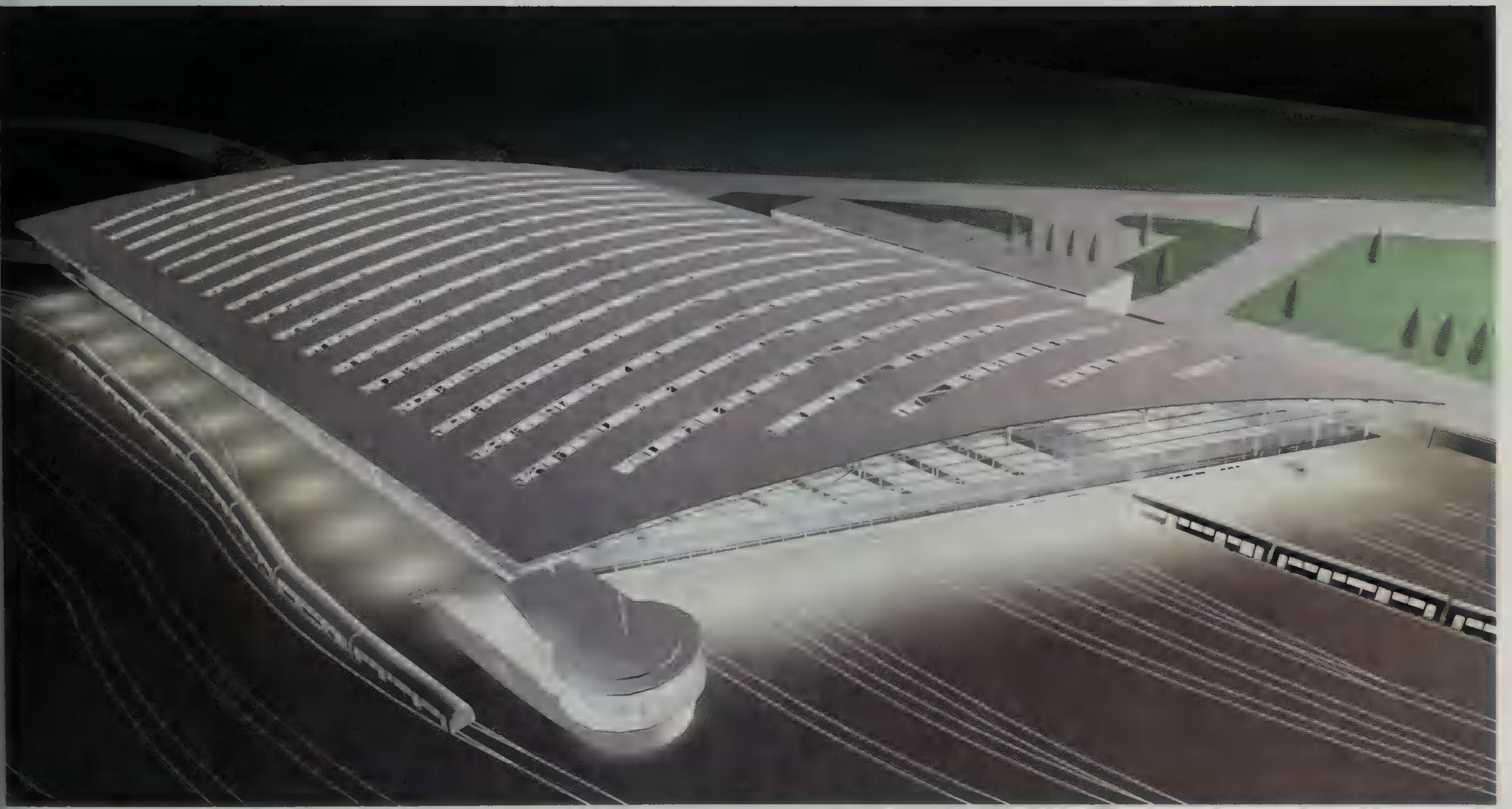
Unlike Pick and Holden, who produced a monolithic evocation of the company, the Jubilee Line Extension reflects the tenor of the times, exchanging paternalism for pluralism by employing a roster of architects whose work is similar in spirit, but far from uniformly corporate. The impresario behind this sophisticated vision is Roland Paoletti, who came to London Underground from a position as architect of the Hong Kong metro. Paoletti considered appointing a single architect for all 11 stations, but quickly rejected this course for several reasons: station sites vary; parallel design would speed the project; and smaller firms, he thought, would be more imaginative. While fee proposals and qualifications were taken seriously, the most important criterion was design quality.

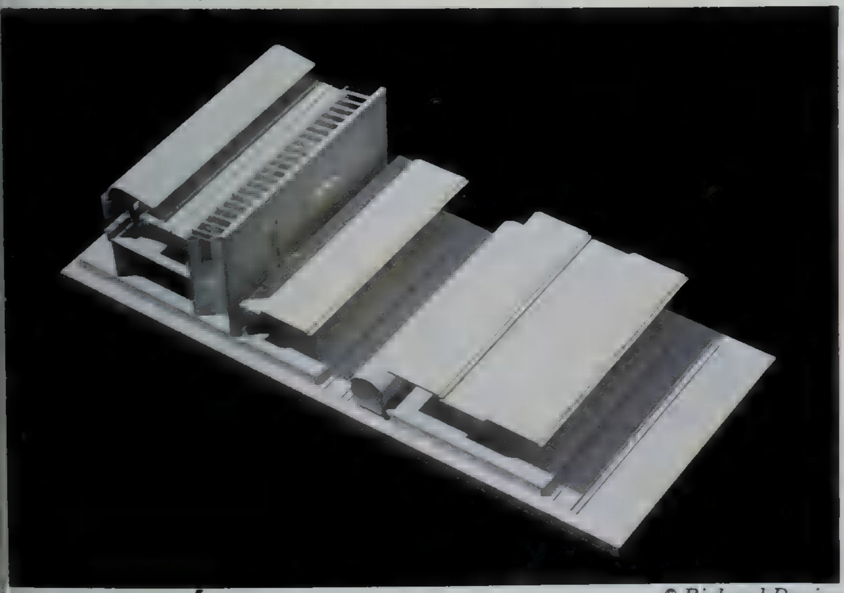
"I tried to choose 11 architects that fit together," says Paoletti. "They are all modern, all structuralists. The uniting idea is the exploitation of civil structure." The Jubilee Line work provides an economical introduction to the rising stars of British architecture. Norman Foster and Michael Hopkins are merely the best known. Others include Ian Ritchie, Ron Herron (once of Archigram), Troughton McAslan, and Alsop and Störmer. Who was not chosen (high-tech romantics Richard Rogers and Nicholas Grimshaw) is as instructive as who was.

Paoletti regards the San Francisco BART as a watershed. There the system architects forced a reappraisal that led to the appointment of several architects asked to design individual stations using a common kit of parts. To develop this idea, Paoletti asked the architects to propose designs for elements that will ultimately be incorporated as unifying standards in all the stations. (He has yet to choose from among the proposals.) Paoletti's taste and trust in his choices (he could have chosen firms with a less-risky esthetic) means that he and the architects share something akin to an intellectual kit of parts. If Paoletti seems to be acting as a patron, it is what he calls "accidental patronage." The Extension could stand as a new exemplar of an architectural corporate identity in the 21st century.
Hugh Aldersey-Williams



An extension to the Jubilee Line will reverse the neglect of London Underground's design legacy, showcasing a dozen of Britain's best architects.





© Richard Davies

1. Waterloo
The sketch suggests the way accommodations for the new Waterloo Station fit within the piers supporting the Edwardian British Rail terminal. Jubilee Line Extension Architects, a consortium of London Underground's design staff, developed the scheme. (See also figure 7).

2. Stratford Market
A parallelogram building spanning 100 meters covers 11 maintenance bays at the East London terminus of the Jubilee Line Extension (JLE). Designed by Chris Wilkinson Architects, the roof structure is based on a 30-deg diagonal grid of 2.4-meter-deep lattice trusses.

3. Stratford
Designed by Troughton McAslan, the sectional model shows stainless-steel-clad wing-like canopies over the tracks for both the JLE and the Docklands Light Rail. A zinc-clad wall separates the public part of the station from two-story accommodations for personnel.

The program by London Underground's architect, Roland Paoletti, asked architects of the new Jubilee Line to admit daylight and avoid decoration.

4. Canary Wharf

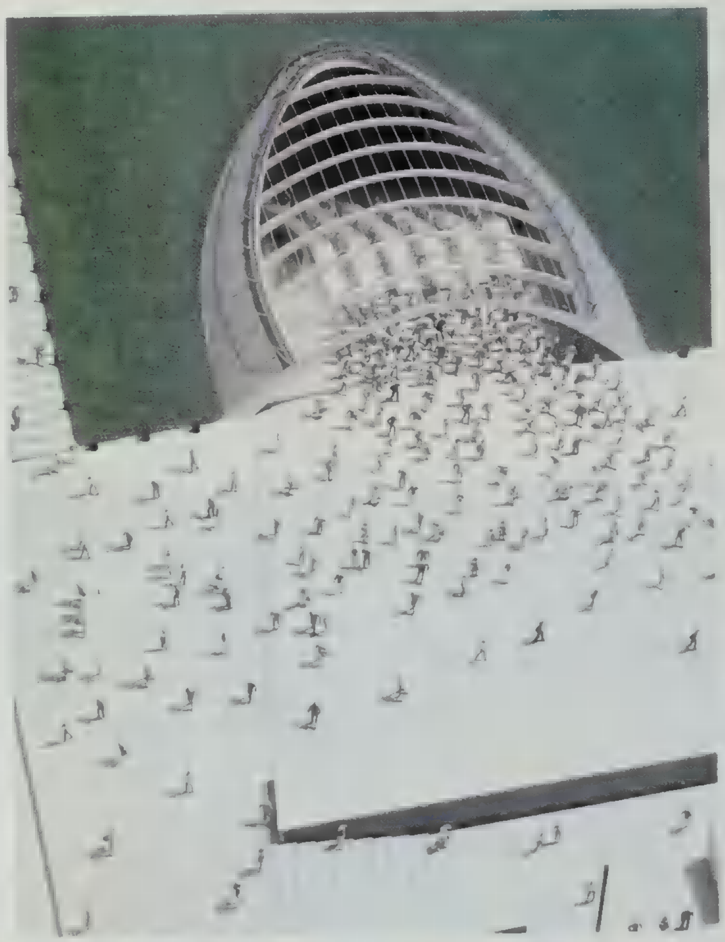
A glazed, scallop-like canopy marks this long-overdue link to the ambitious but troubled centerpiece of London's Docklands. Designed by Sir Norman Foster & Partners, the new station will interconnect with an existing but inadequate Docklands Light Railway station, providing a peak passenger flow of 23,000 persons per hour. Arriving passengers emerge gradually into daylight and a public park from under the shelter of the canopies (4, 4a). Inside (4b), space is scarcely more constrained as passengers descend to a broad underground "street." The 19 escalators spear the space, typically off-axis, a recurring motif of Foster's that has been seen from the Sainsbury Centre to the Hongkong Bank.

5. North Greenwich

The use of space and color is particularly dramatic at this entirely new station. Designed by Alsop and Störmer, the station has a roof supported by angled concrete columns that appear to stride through a double-height space. Cables from the roof suspend walkways, which appear objectlike over the tracks.

6. Southwark

Pursuant to Roland Paoletti's brief, the perspective sketch of the lower levels at the new Southwark Station, by MacCormac Jamieson Prichard, shows shafts of light providing a visual link between the upper escalator concourse (6), [illegible] and track level. A [illegible] pro- [illegible] to the



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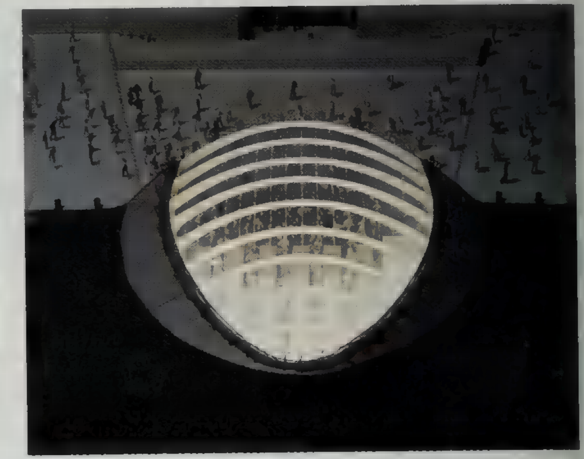

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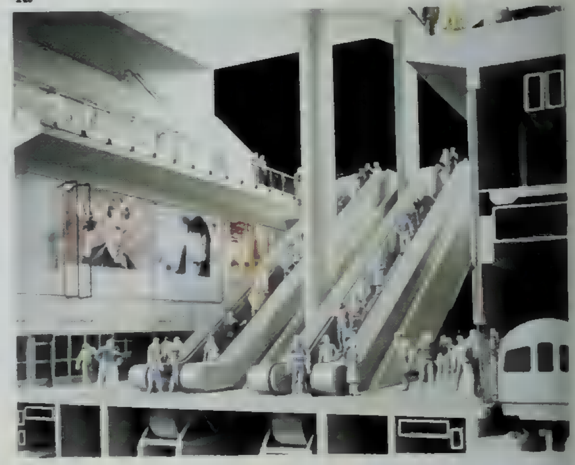

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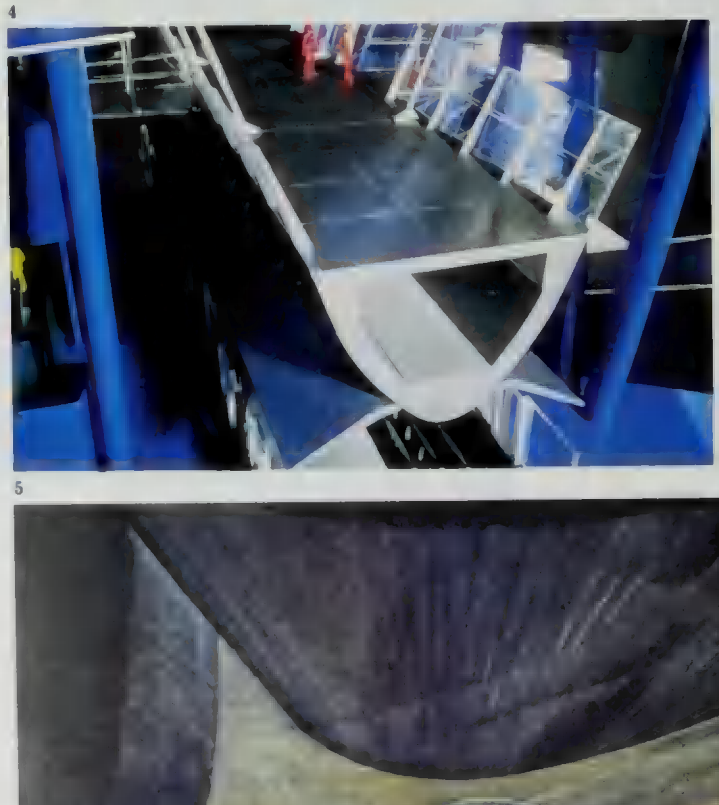

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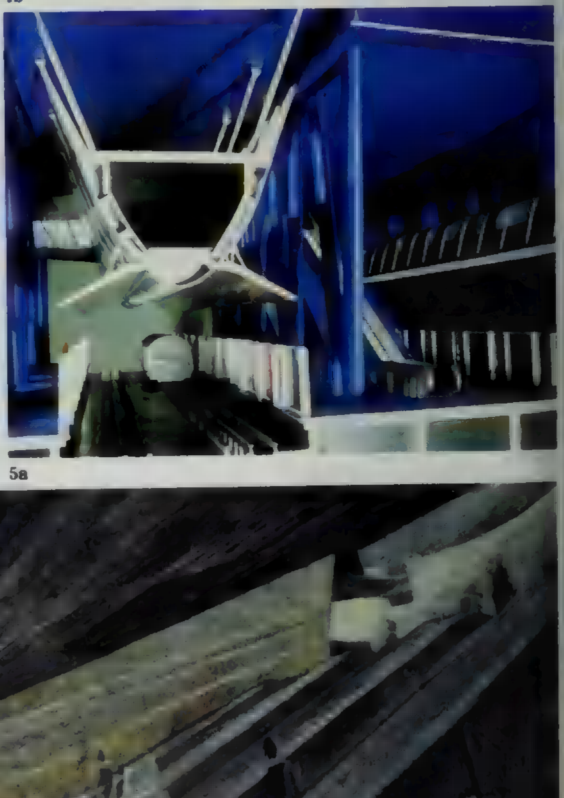

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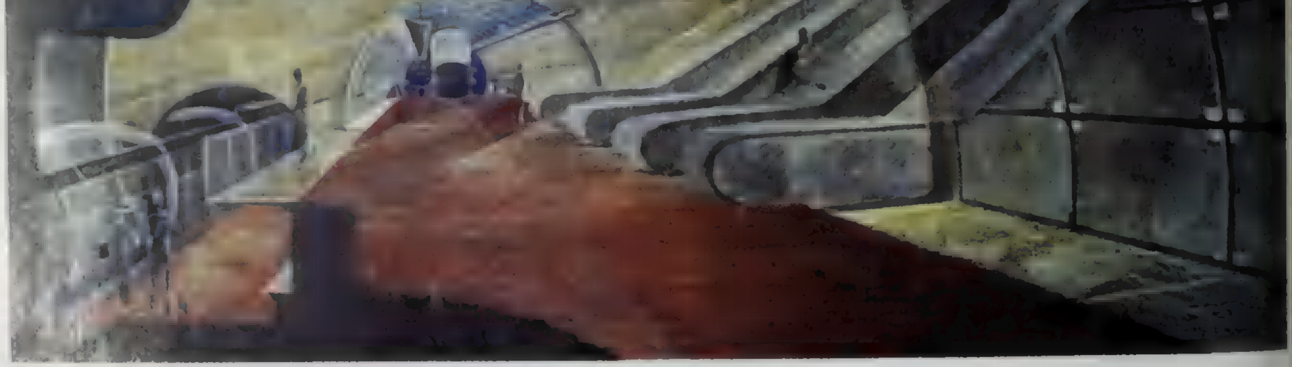

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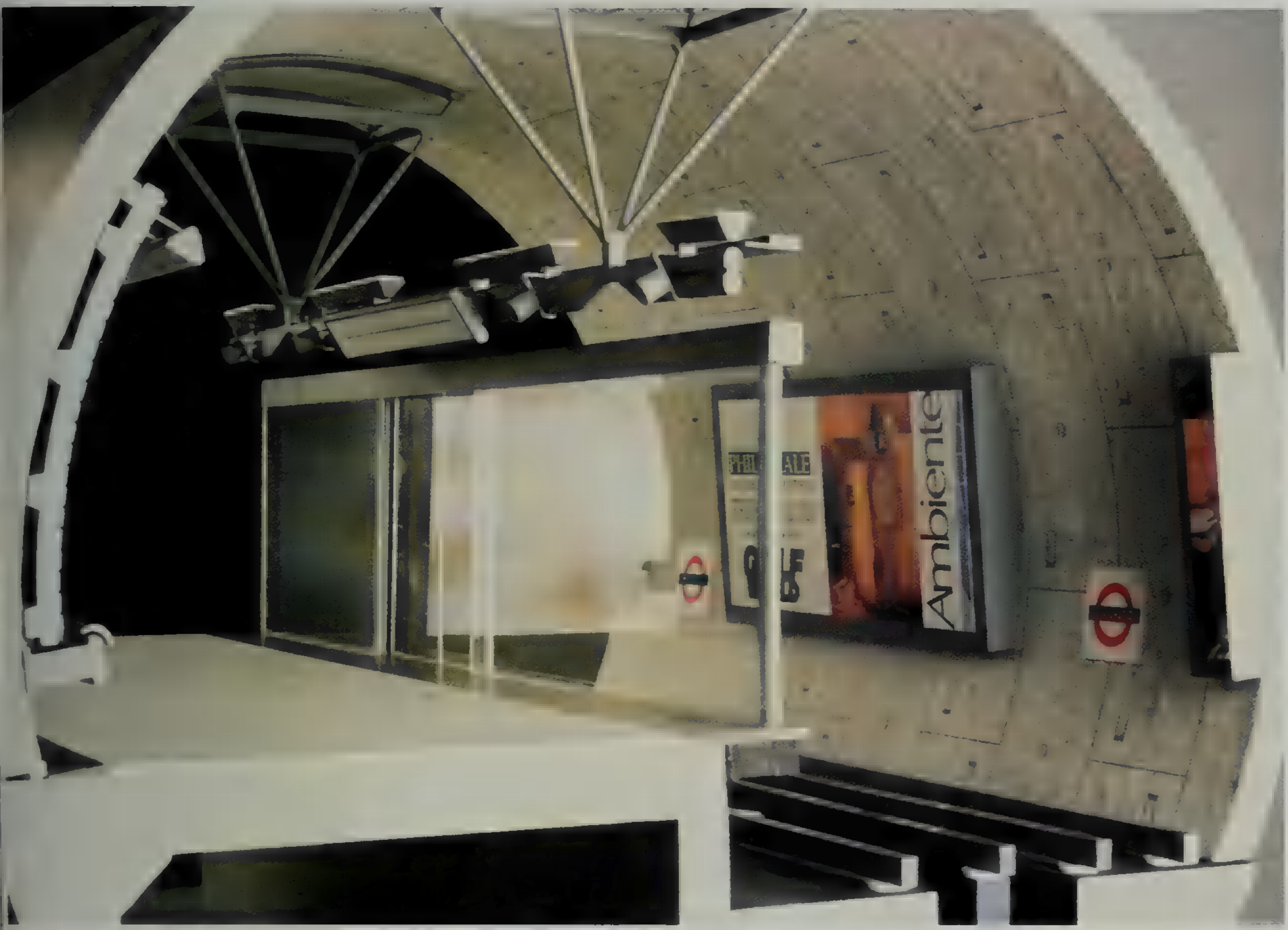

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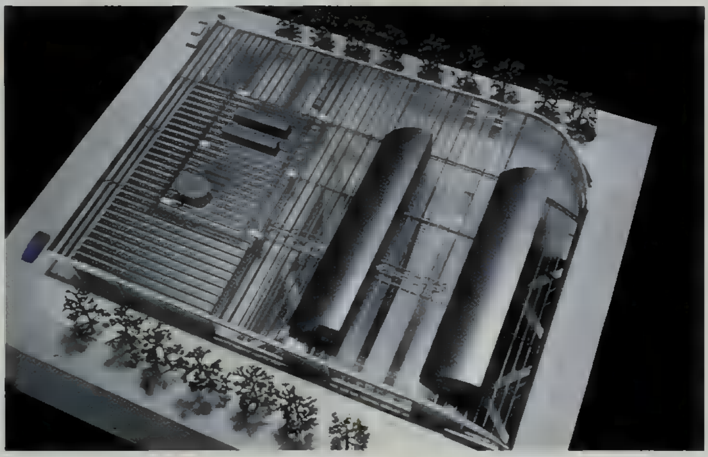
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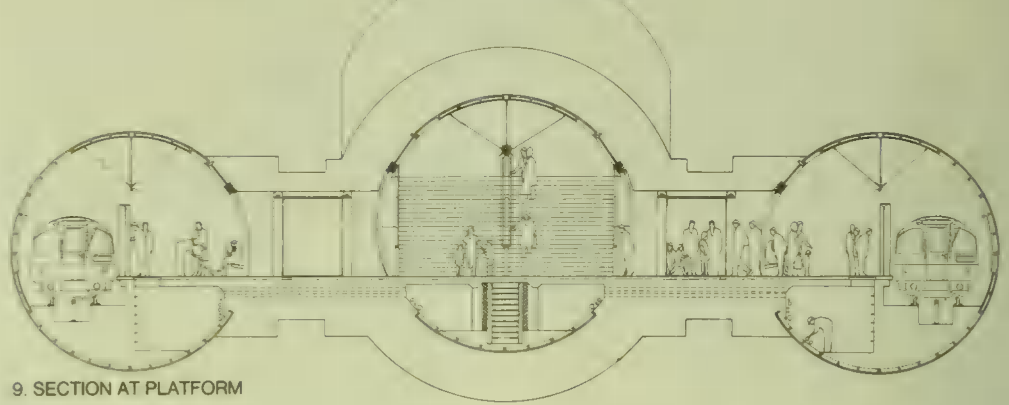
7. Waterloo
Waterloo is one of several stations in which Paoletti asked the architects to propose tunnel cladding panels and platform furniture, signage, lighting, and advertising facilities for inclusion in systemwide guidelines. Though each JLE station is unique, these elements of the designs are meant to be consistent, updating London Underground's corporate identity. One of these common elements would be new sliding transparent barriers at trackside. Currently, the system's passenger platforms are open to the tracks, not adequately preventing accidents and potential suicides. The inhouse Jubilee Line Extension Architects designed barriers (7) that will eliminate these risks while providing the sense of openness offered by views across the tracks and retaining a clear line of sight to billboards located on the far tunnel wall. 7a: concourse and ticket hall, set within the structure of the existing Waterloo railroad station.

8. Bermondsey
Ian Ritchie Architects provides a graphic expression of the way light is reflected down into this deep station interior through two roof-mounted scoops (see also figure 11). Huge horizontal braces cross the light wells diagonally. The model shown is incomplete, omitting a six-story commercial development to its left. Even without this addition, the project has more impact on its immediate neighborhood than most of the other stations. Ritchie's is a straightforward functionalist solution, avoiding the obvious "public-works" symbolism in the aboveground structure, which was a hallmark of stations designed by Charles Holden in the 1920s and '30s for London's suburbs.

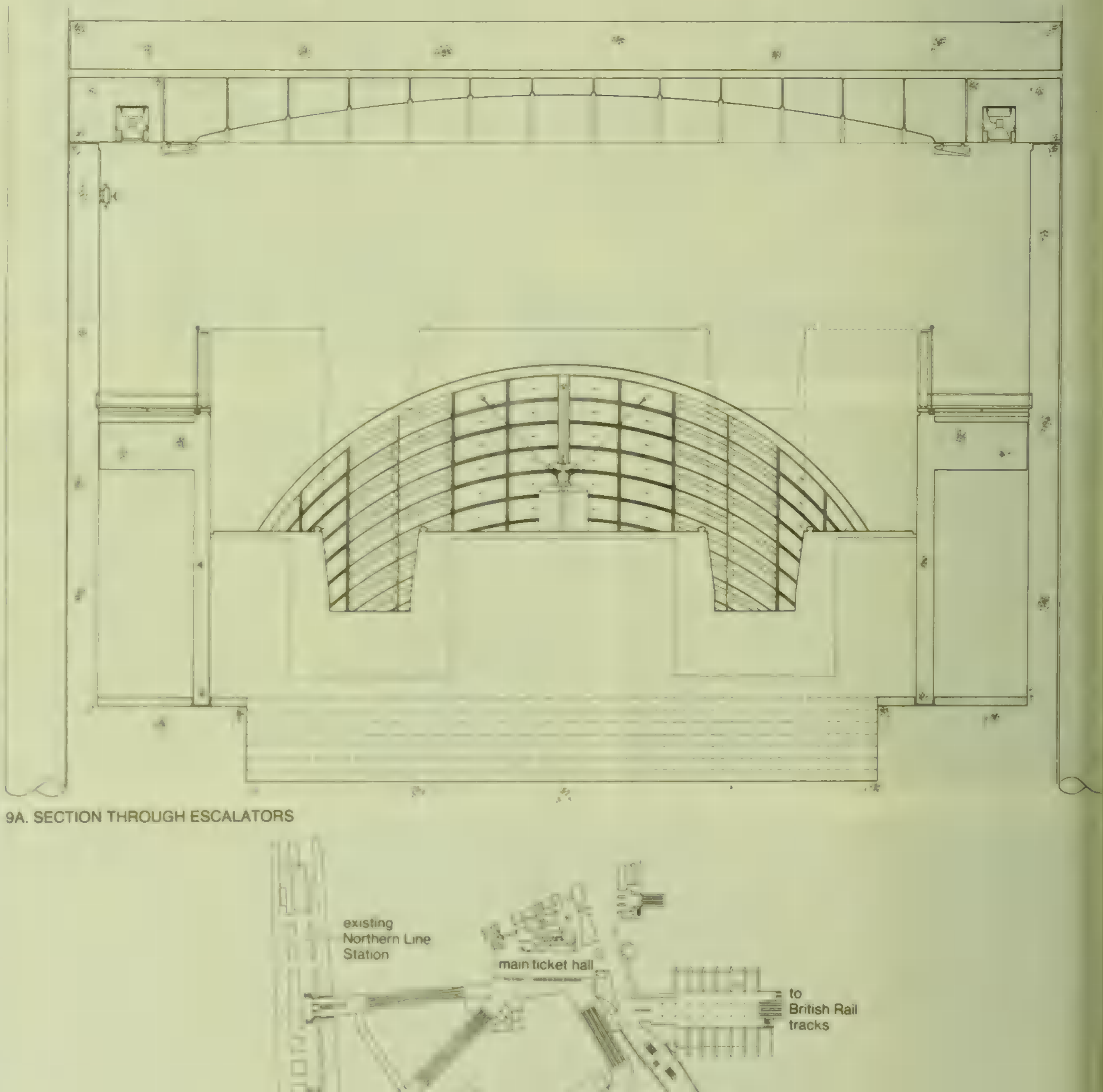
Though platforms will conform to a common reinvented house style, each station "becomes personal to the architect as you move away from the platforms," says Paoletti. Of the 12 JLE stations, all but two connect to other London Underground lines, and several must also offer transfers to British Rail commuter-rail or long-distance stations.

9. London Bridge

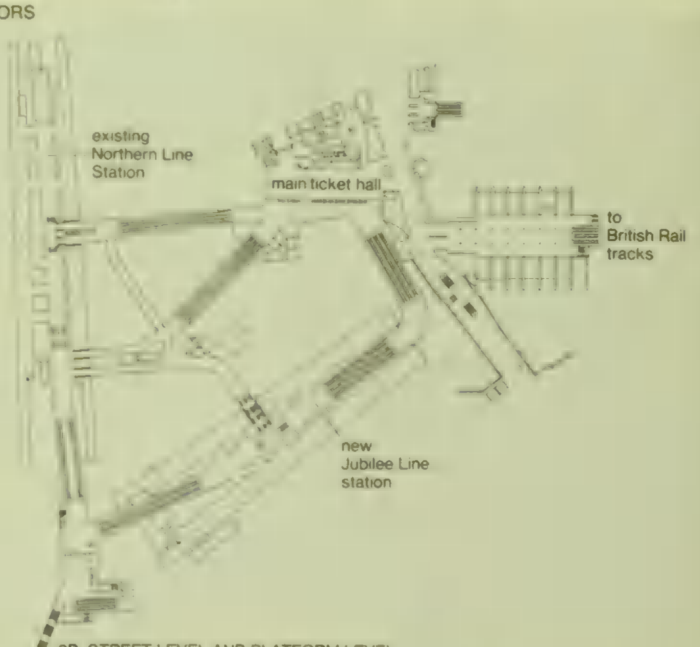
London Bridge Station, by Weston Williamson, incorporates proposals for many of the new design elements that will be common to the JLE stations, including his version of sliding glass doors adjacent to the tracks. The final design of these standardized items has yet to be decided. The cylindrical tunnels at platform level (9) remind patrons of the configuration of the existing system. The architects have devised modular infill for the cellular, ribbed-steel tunnel lining to accommodate signage, utilities, and acoustical treatment behind cast-iron facings (escalators to platform, 9a). Additional lighting and public-address speakers are attached to a T-shaped extrusion suspended from the ceiling. The circulation plan (9b), illustrates the complexity of the conditions at many of the stations, which must interconnect track and street levels with minimal opportunity for new above-ground architecture. New concourses link the existing Northern Line with the JLE line platform.



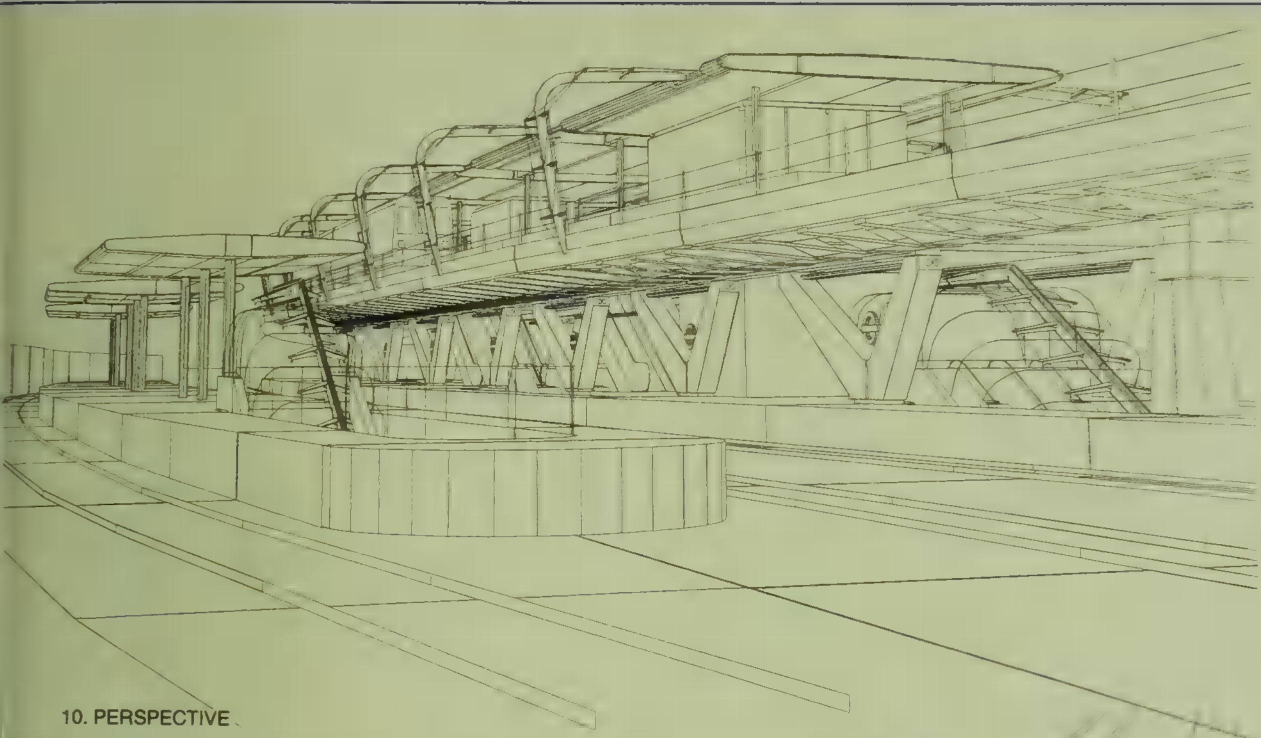
9. SECTION AT PLATFORM



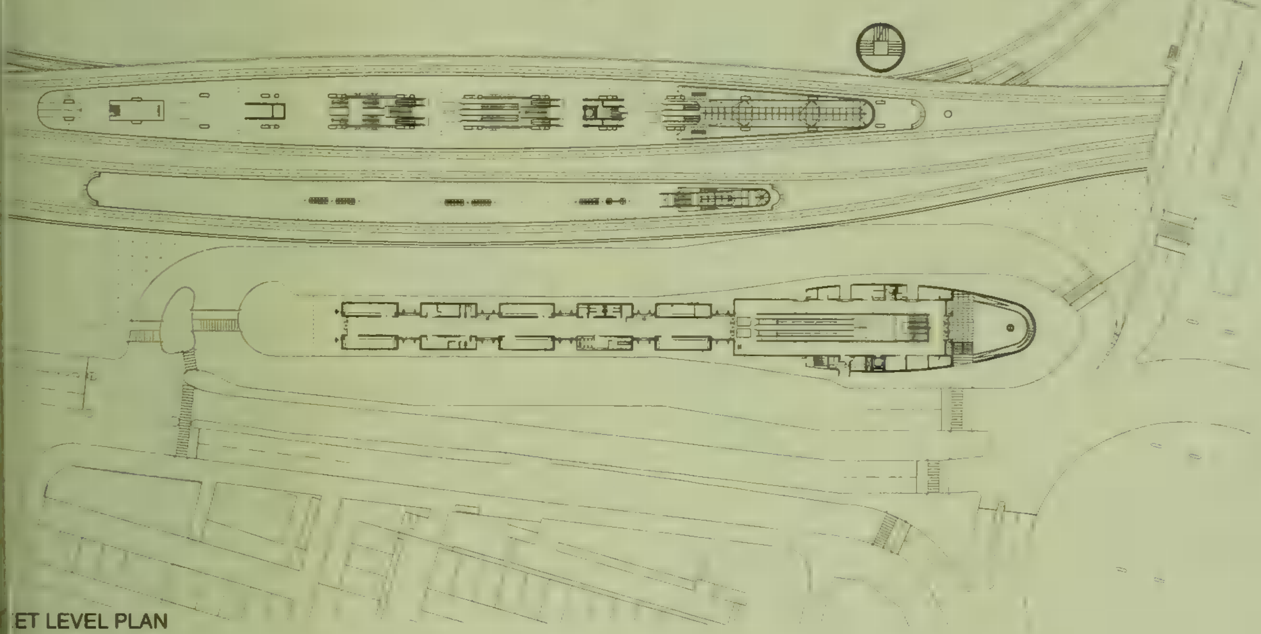
9A. SECTION THROUGH ESCALATORS



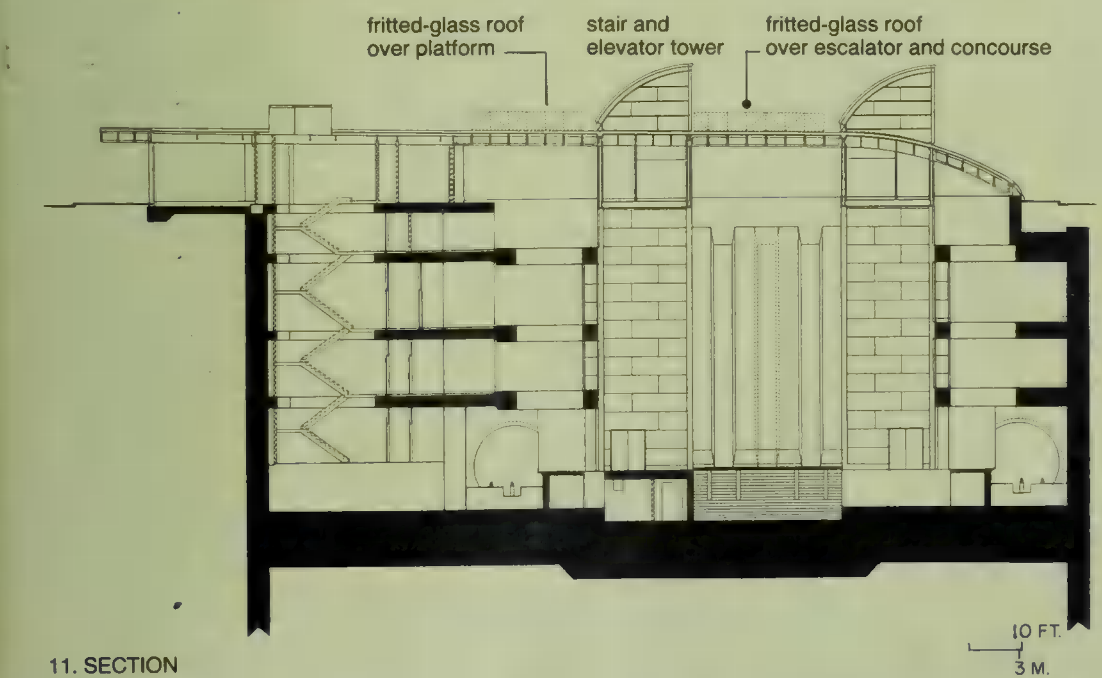
9B STREET LEVEL AND PLATFORM LEVEL



10. PERSPECTIVE



ET LEVEL PLAN


fritted-glass roof over platform
stair and elevator tower
fritted-glass roof over escalator and concourse
10 FT.
3 M.

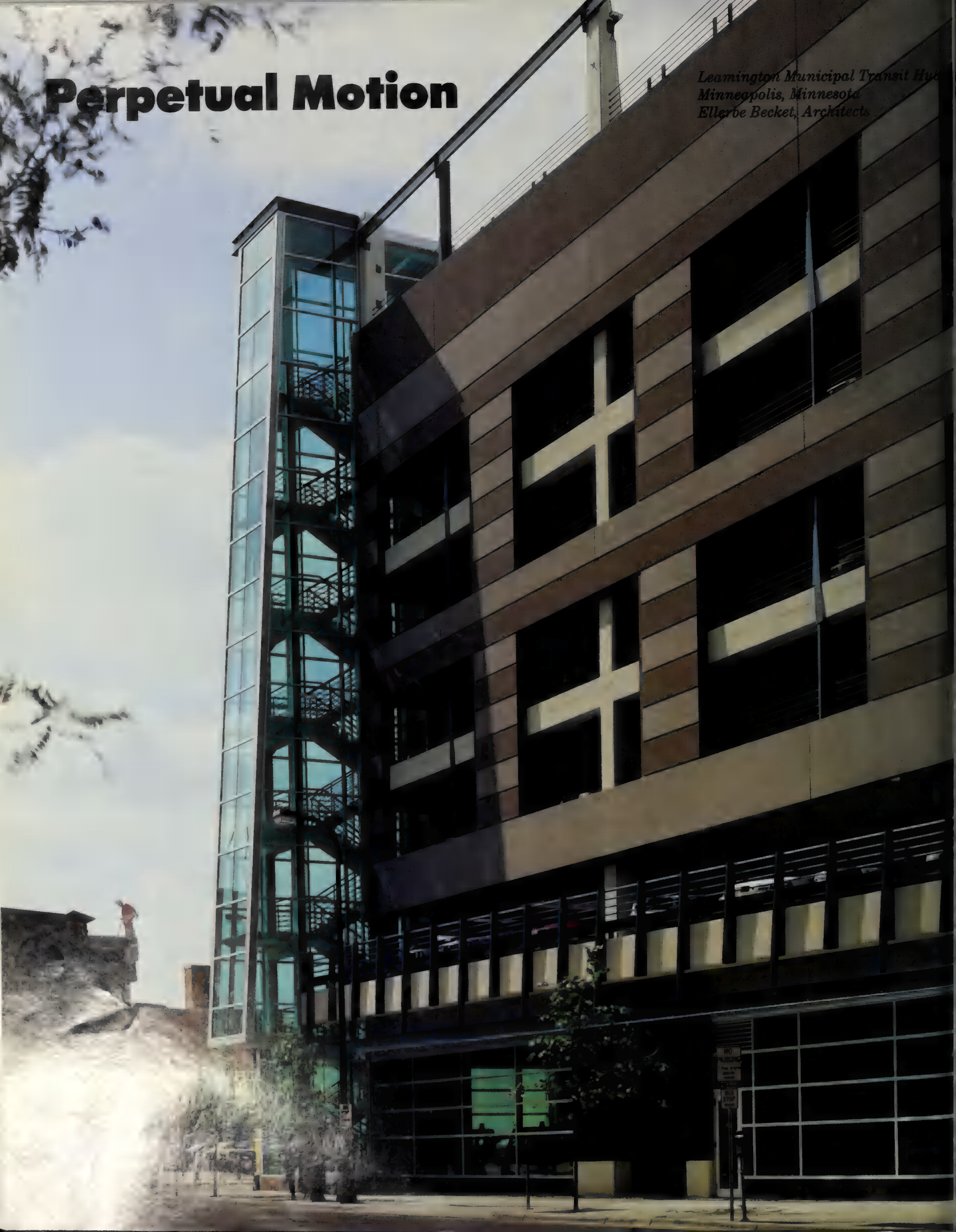
11. SECTION

10. Canning Town
Troughton McAslan's design for this surface station is understandably more explicit than the subterranean stations in its handling of the engineering tradition that informs most of the JLE designs. British Rail and Docklands Light Railway services connect with London Underground trains here, and all three lines are brought into close proximity. The Docklands line runs above the Underground line in a cagelike superstructure raised on concrete supports (10). In plan (10a), the JLE runs under the Docklands Light Rail with British Rail tracks shown middle, and a bus transfer station shown at the bottom. Patrons cross to any of the at-grade platforms through an underground concourse.

11. Bermondsey
A section through the station (also shown figure 8) shows that the depth of the new rail route is shallower than many branches of the existing system, enabling use of cut-and-cover construction. Under these circumstances, architect Ian Ritchie has made access to platforms and the provision of natural light much more generous than is usually seen in subways.

Perpetual Motion

Leamington Municipal Transit Hub
Minneapolis, Minnesota
Ellerbe Becket, Architects



ccupying almost a full city block between the new convention center and Minneapolis's central business district, the nine-level Leamington Municipal Transit Hub could easily have been a black hole sucking life out of an urban area undergoing transition. Certainly, many other parking structures of this size have been exactly that. But instead, the 2,100-car garage and transit facility brings a refreshing sense of animation to its setting and fully engages its surrounding streets.

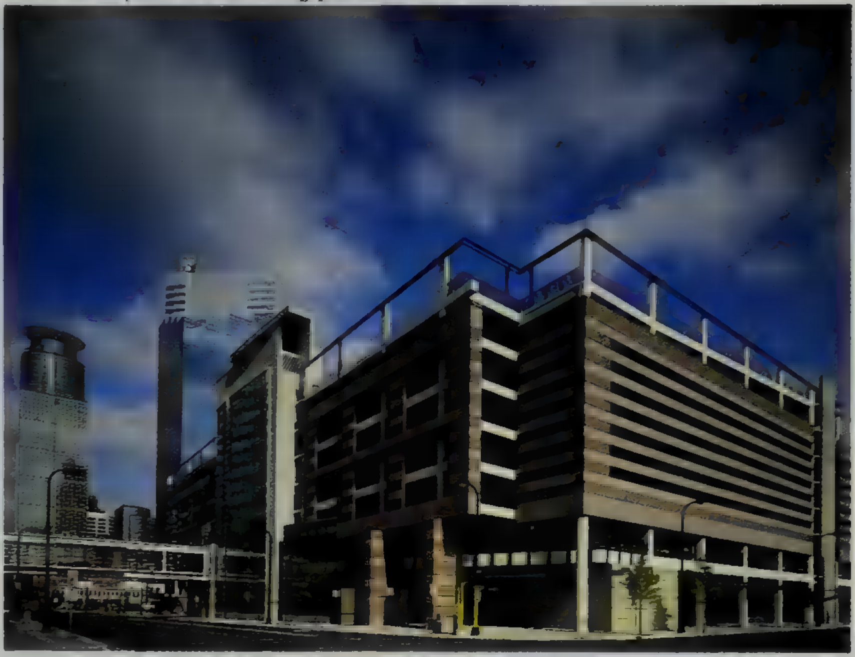
A series of public hearings at the beginning of the project helped identify two seemingly contradictory goals, which Ellerbe Becket set out to resolve. "The city wanted it to look like a building but be clearly identifiable as a parking garage," says Rich Varda, the partner-in-charge. "No one wanted a static structure with long horizontal slots." In addition to seven levels of parking, the facility would also include an express-bus station one level below the street and a shuttle-bus station on-grade.

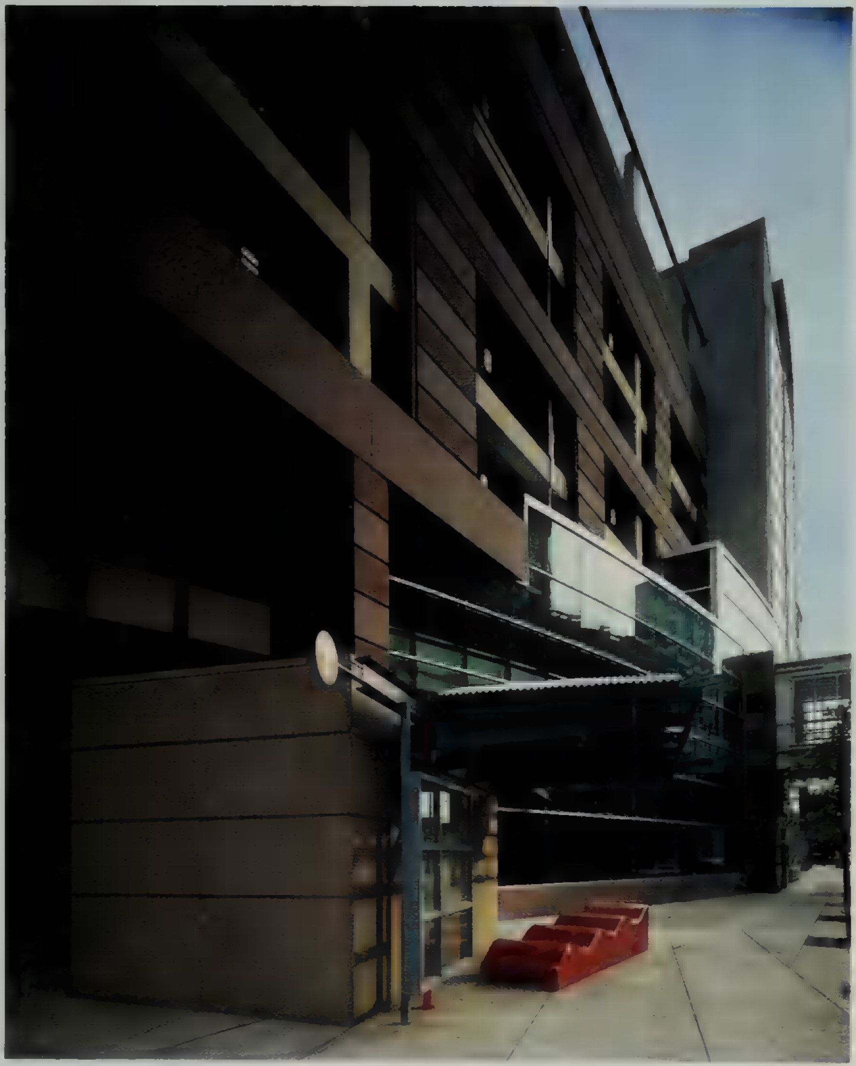
As designed, the building is a poured-in-place concrete structure with post-tensioned beams. Epoxy-coated reinforcing bars and micrasilica added to the concrete help reduce damage from water penetration and cracking. To make users feel safe from crime, the architects used nonreflective green-tinted glass for stair and elevator towers and created many openings to view interior spaces. A security office with a bank of television monitors is on full display on the ground floor and lighting levels are kept high (at least 5 footcandles in parking areas). To engage the street, the building bows out at the center of its Second Avenue facade and then curves inward at the corners so the sidewalk and pedestrians are drawn inside. Retail space at two corners also helps create active street frontages.

In designing the building's exterior, the architects took two different approaches. Because the city asked that the structure's ramps—those elements that scream "garage" the loudest—be played down, Ellerbe Becket clad the north and south elevations with tightly spaced horizontal bands of precast concrete. On the more public east and west elevations (Second and Third avenues), the architects used arge double-floor openings that reveal the concrete frame within and reduce the apparent size of the building. These facades also angle slightly away from the street (at about 5 degrees), widening the sidewalk where people congregate and introducing a sense of animation. This same angle appears as a vertical slope on the glass face of the main stair tower and in a variety of details such as handrails and guardrails. The cumulative effect of these subtle gestures is to chip away at the building type's traditionally boxlike nature.

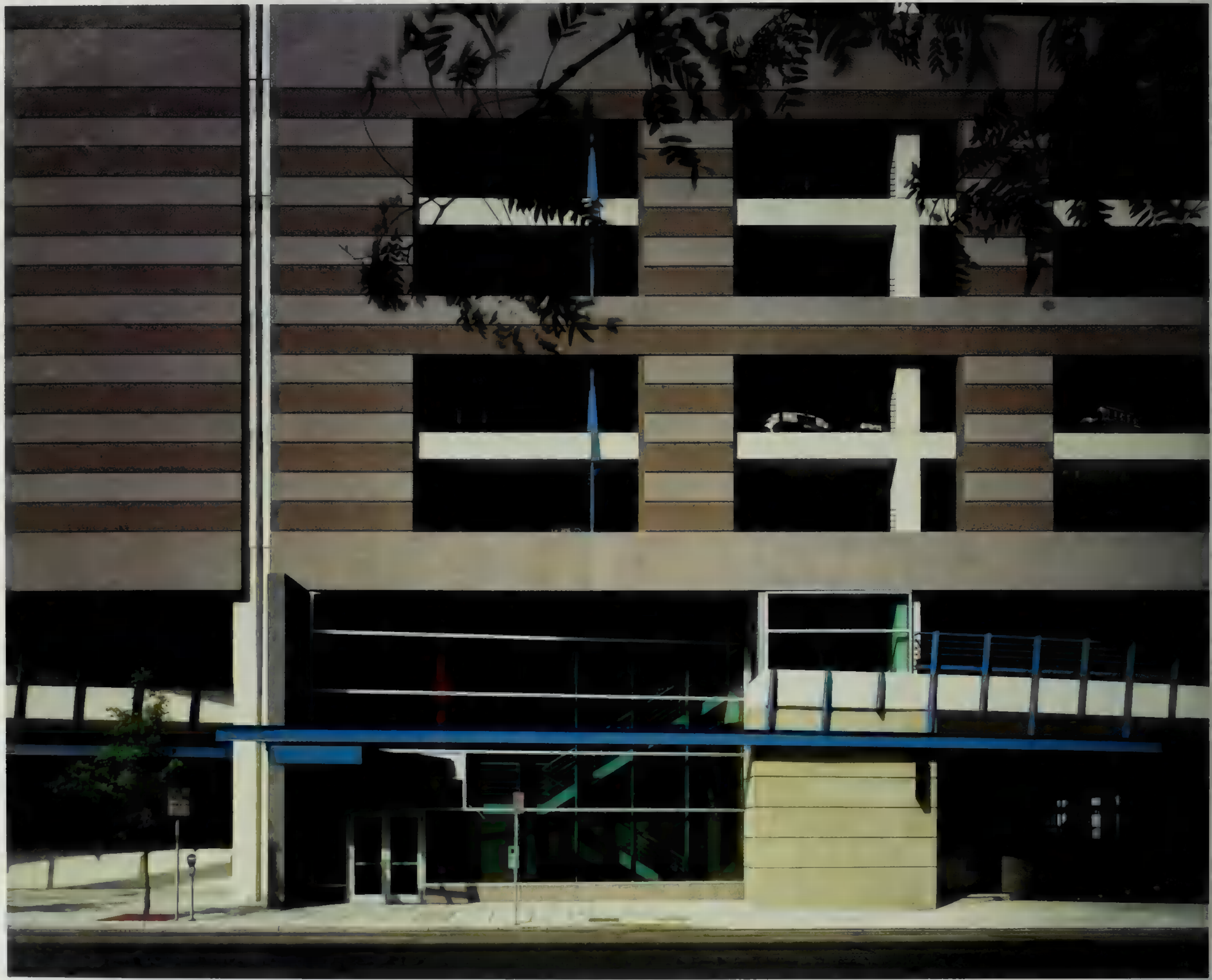
Traffic circulation within the garage is organized as a "double-threaded helix," in which cars can move along either of two intertwined loops on each level. The pattern enhances visibility of parking spaces from the loops and is an efficient way of moving many cars in and out of the garage at one time. *Clifford A. Pearson*

Jon Miller, Hedrich-Blessing photos

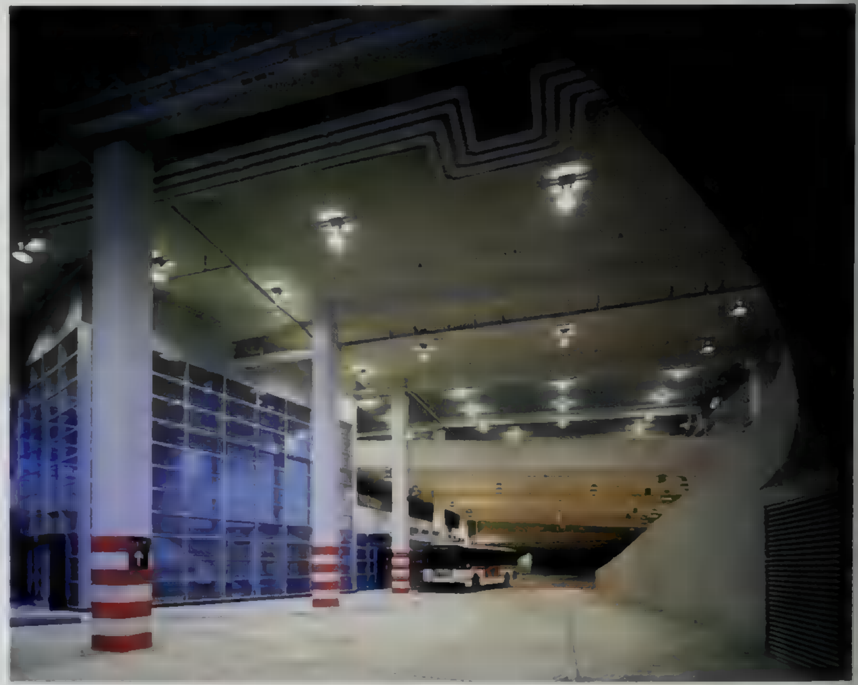


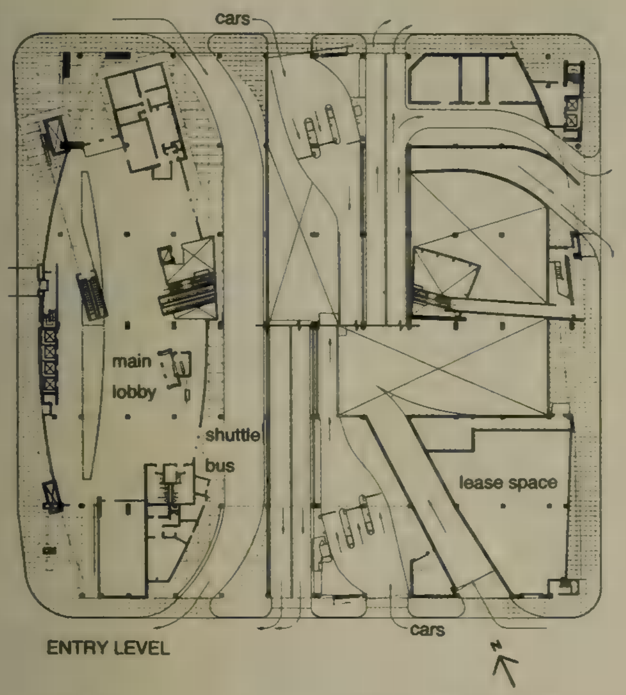


The east facade (opposite) includes retail on the ground floor and double-height openings that make the seven-level structure appear to be a three-story building. The west facade (above and top) is the most public side of the building and has a skywalk on the second level connecting to a nearby hotel.

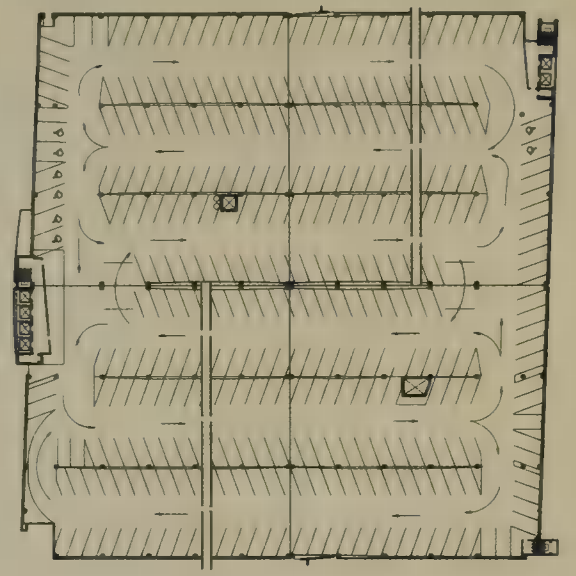


Precast concrete used as cladding for the exterior of the building (above) picks up the color of the nearby convention center. A shuttle-bus station (right) is located on the street level just behind the building's main lobby (opposite left). An express-bus station is located one level below the street (opposite right). Because large numbers of people from the convention center arrive and depart at one time, the architect and traffic engineer designed a double-threaded helix pattern for circulation within the garage (plans opposite). Each trip around the loop takes a car up two levels.

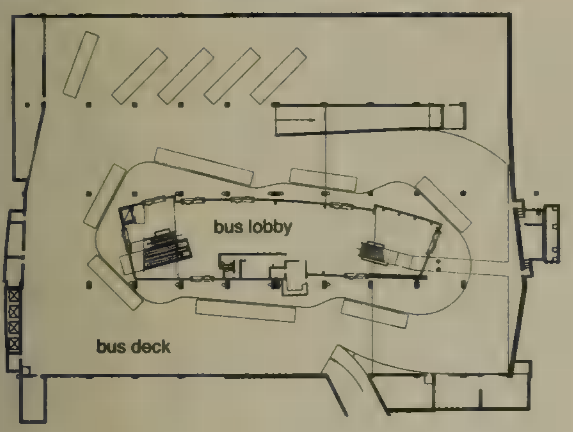




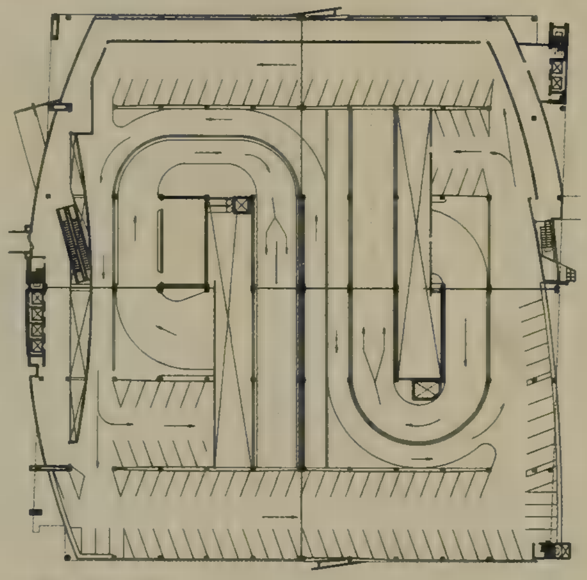
ENTRY LEVEL



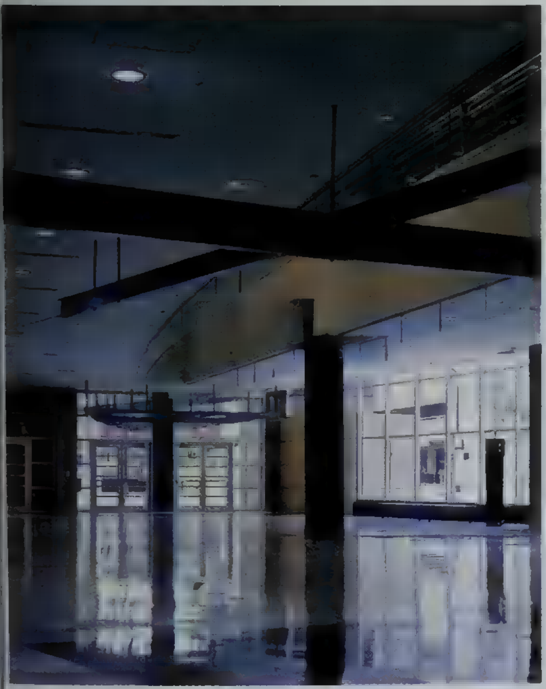
TYPICAL PARKING LEVEL

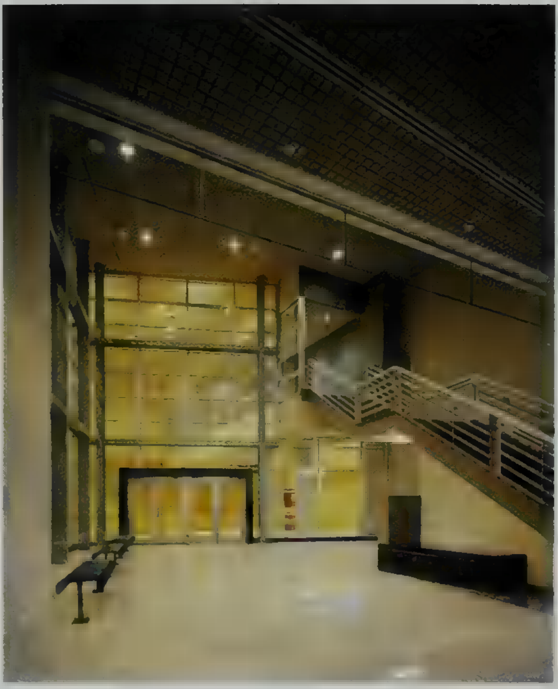


LOWER LEVEL



SKYWAY LEVEL



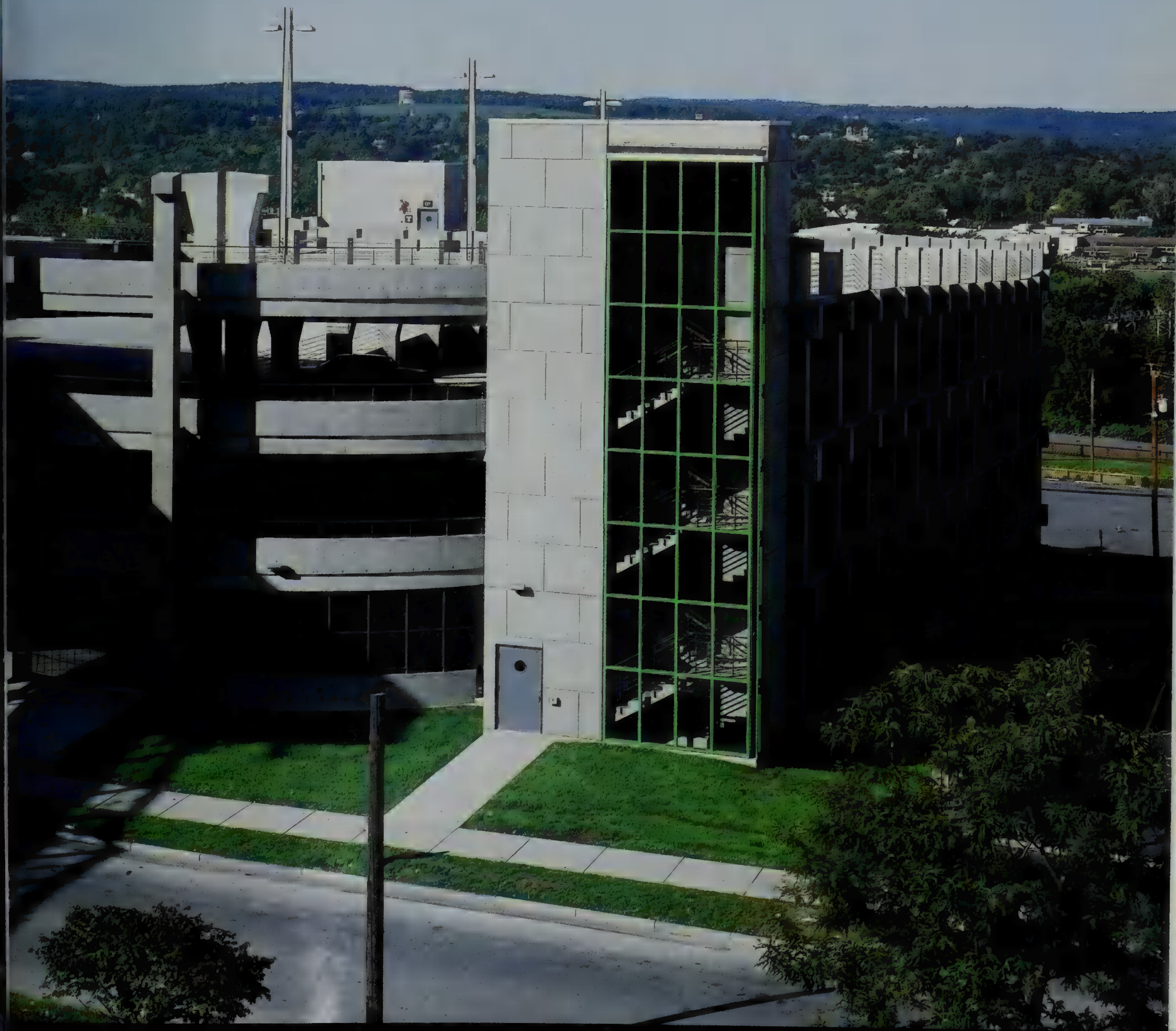


Credits
Leamington Municipal Transit Hub
Minneapolis, Minnesota
Owner: *City of Minneapolis*
Architect/Engineer: *Ellerbe Becket—Rich Varda, design principal; Greg Nook, project director; Pat Bougie, project architect; Mark Wentzell, designer; Scott Saunders, structural engineer; Stan McCoy, mechanical engineer; Doug Renier, civil engineer; Steve Earl, electrical engineer; Randy Manthey, landscaping*
Consultant: *Carl Walker Engineers (parking)*
Construction Manager: *Kraus Anderson*

Making the Grade

A new garage at Syracuse University by Bohlin Cywinski Jackson makes the most of its exposed structure.

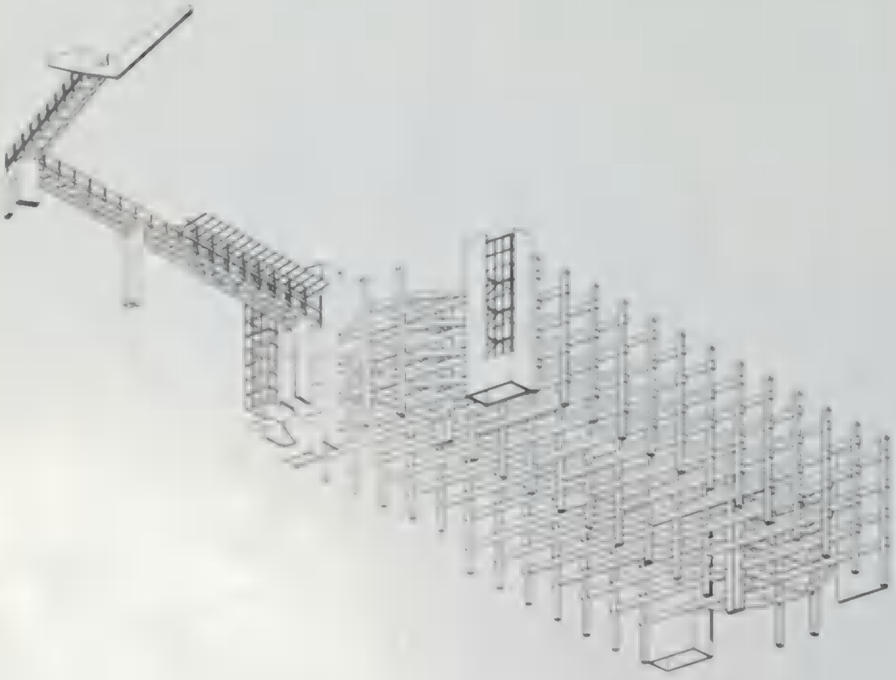
Irving Avenue Parking Garage
Syracuse University
Syracuse, New York
Bohlin Cywinski Jackson, Architects



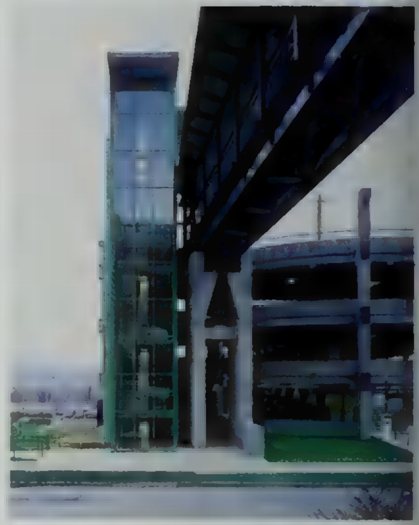
Although not the most glamorous building type, parking structures offer architects the chance to show off their knowledge of architectural anatomy. Free of many of the demands made on enclosed buildings, garages allow designers to focus on expressing structure and exposing elements usually hidden by curtain walls and cladding. Bohlin Cywinski Jackson took full advantage of this opportunity with its Irving Avenue Garage at Syracuse University. "This was a wonderful chance to show the building's bones, the structure itself," explains Peter Bohlin, partner-in-charge of the project.

On full display is the garage's poured-in-place concrete framing—rectangular columns dividing two aisles, and five levels of parking slabs set within exterior columns. Egress towers stand at the northeast and southwest corners, while a third tower supports a steel bridge connecting the garage to the main part of the university campus. Each of the key elements—frame, ramps, towers, and bridge—is clearly differentiated from the other, reflecting an approach often found in Bohlin Cywinski Jackson's work. Poured concrete is post-tensioned and includes silica fume, a fine-grain additive that makes the material less porous and prevents cracking caused by temperature changes and road salt. Because the amount of expansion and contraction in concrete columns varies with their exposure to the elements and their structural loads, the amount of reinforcing built into each column had to vary as well. As a result, the garage's columns were "tuned, almost like a musical instrument," says Frank Grauman, the project director. In general, columns closest to the perimeter were designed to move the most and those near the center the least. Instead of ramps, the garage has sloped floors for cars to drive up or down; only the curved ends of each floor are level.

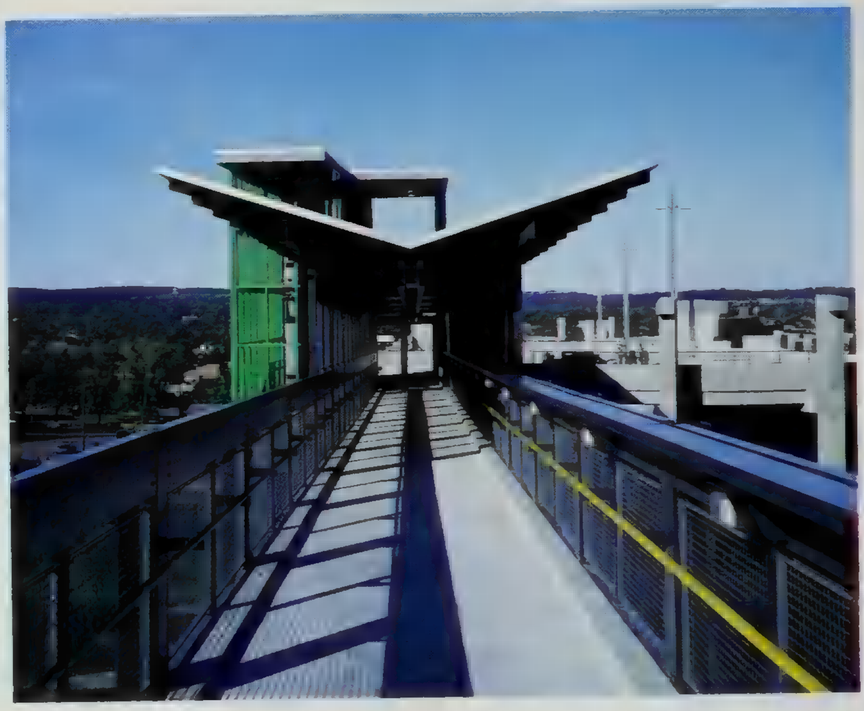
Located on a sloping site, the 433-car garage connects to the central part of campus via a steel-frame pedestrian bridge supported on poured-concrete towers. To help negotiate the change in grade, the garage features a floor-to-floor height of 12 feet, instead of the more typical nine feet. As a result, the structure has an open, skeletal feeling which the architects carefully enhanced by using post-tensioned cables rather than solid panels as perimeter barriers. By making the garage as transparent and sunlit as possible, BCJ dealt with a growing concern for security while also creating a structure that reaches out toward, rather than shutting itself off from, its surroundings.
Clifford A. Pearson

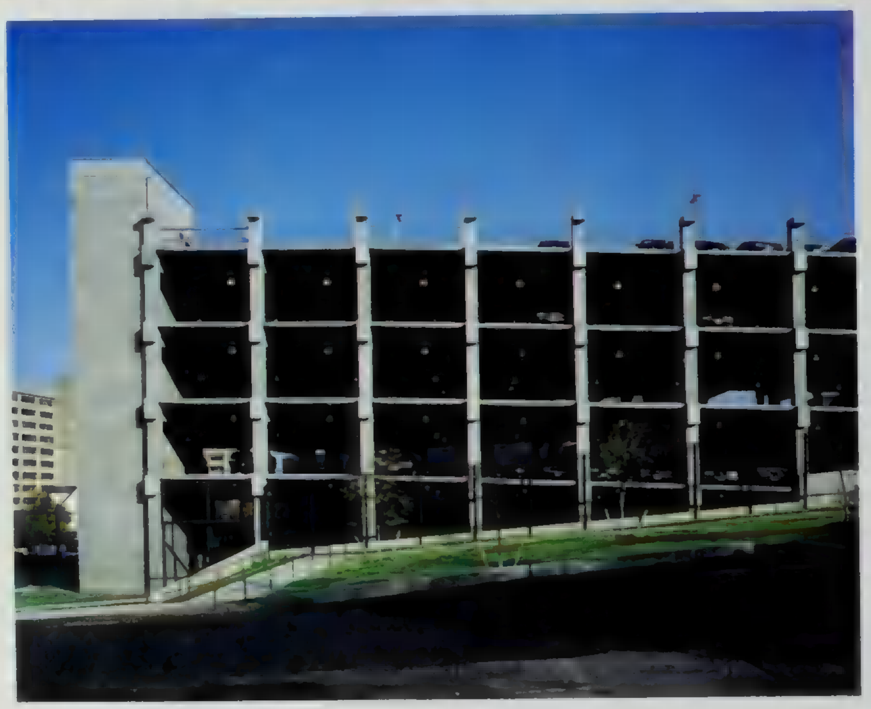


© Karl Backus photos



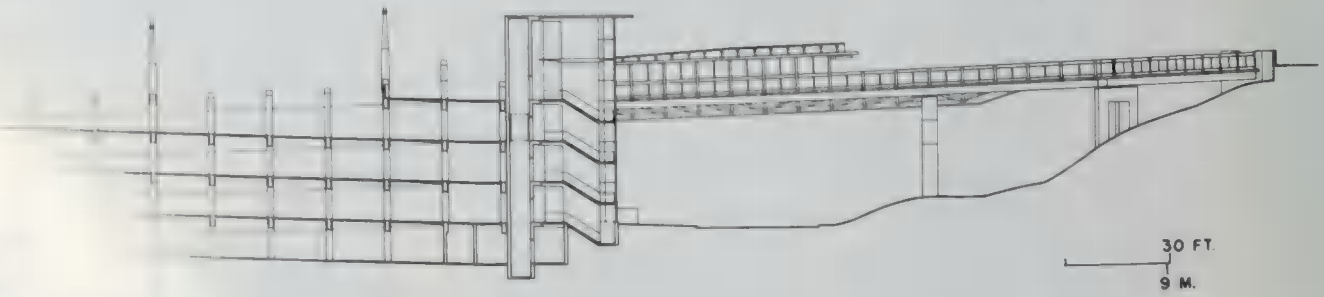
While cars enter the garage at either of the short ends of the structure at grade, pedestrians enter from the top level via a steel bridge (above) connecting to the central part of campus. For security reasons, stairs inside the access towers and the bridge tower (above center and opposite) are wrapped in glass and open to view. The 433-car garage was designed so another level of 88 parking spaces could be added. The bowed portion of the garage (opposite) provides room for cars to turn and helps express the movement of traffic inside. Worm's-eye view (axonometric) shows the structure's concrete frame.

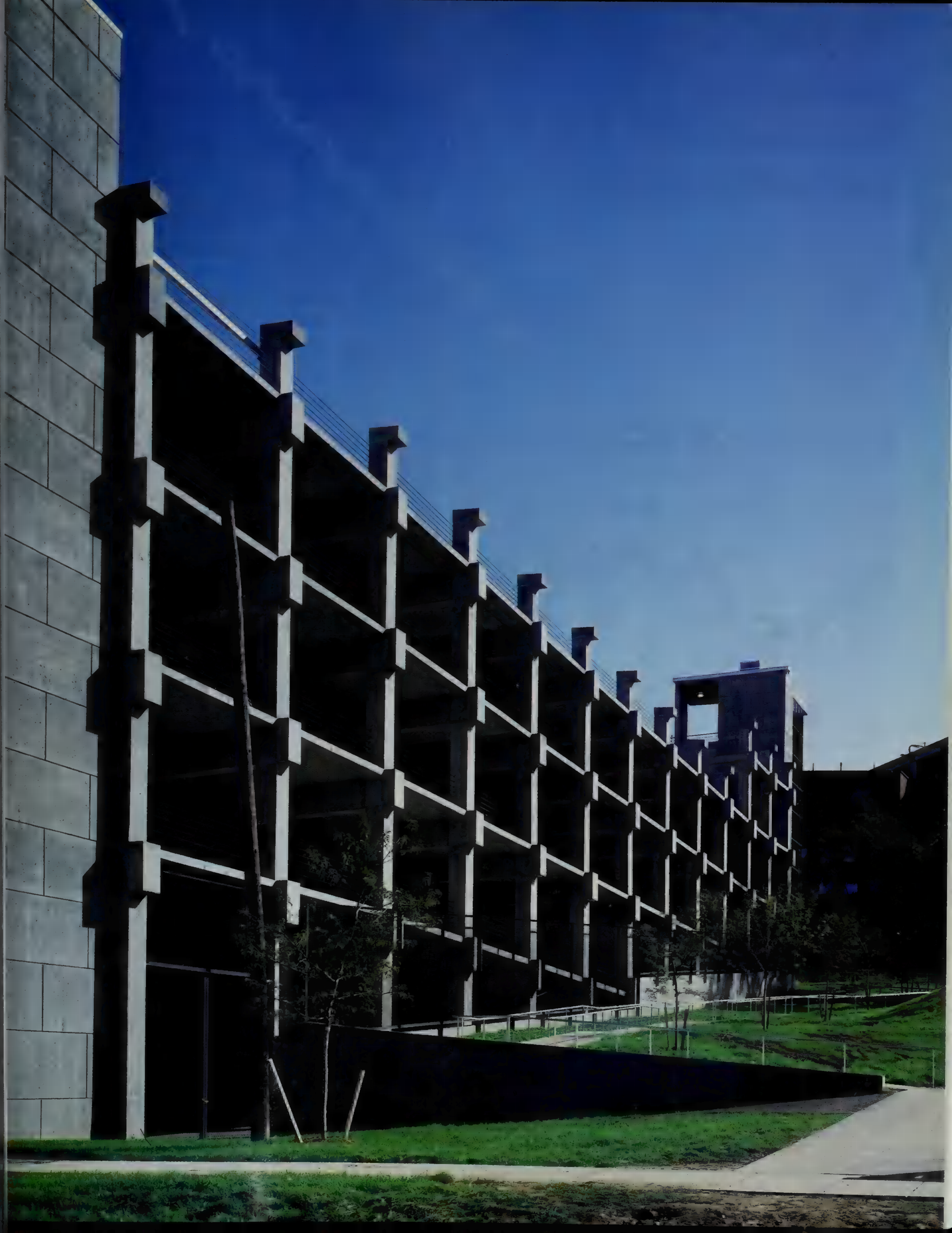




To negotiate its steep site, the garage features a floor-to-floor height of 12 feet, which gives it an open feeling (bottom left). To enhance this sense of openness, the architects used metal cables instead of solid panels as barriers (above). A wing-shaped concrete roof prevents icicles and sleet from sliding onto the road below the bridge linking the garage to the center of campus (top left).

Credits
Irving Avenue Garage
Syracuse University
Syracuse, N. Y.
Owner: *Syracuse University*
Architect: *Bohlin Cywinski Jackson—Peter Q. Bohlin, partner-in-charge; Frank W. Grauman, project director; James A. Bell, project manager; Donald E. Maxwell, Joseph N. Biondo, Gary Wong, design team*
Engineers: *John P. Stopen Engineering (structural); Galson Engineers/Architects (mechanical/electrical/plumbing)*
General Contractor: *Hueber-Breuer Construction*



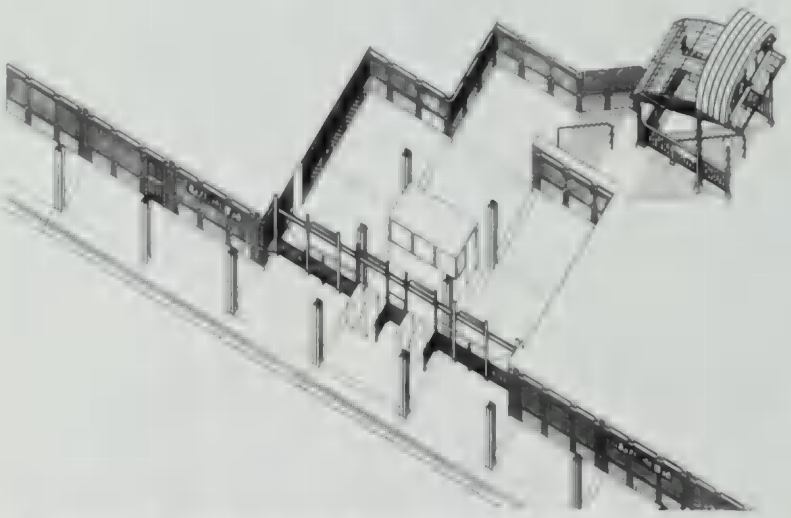


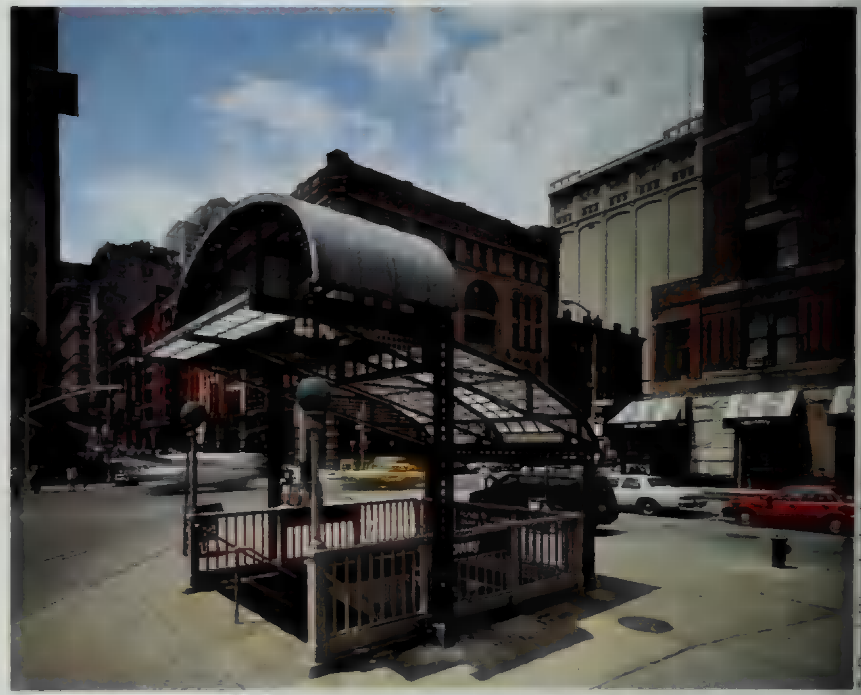
Focus on: Value-added Infrastructure

The word "infrastructure" conjures up the unglamorous, stark appearance of concrete sewer plants and grim transport structures. But some architects, designers, and their clients have found good reasons to bring better design to projects that might otherwise be gross intrusions on their communities. Input from a merchants' organization in New York City prompted the design of a fanciful structural steel-and-glass canopy over a subway station entry stair. In Seattle, an environmental-design firm used berms, native plants, and grasses to blend a sewage-treatment plant with an adjacent park.

Franklin Street Station

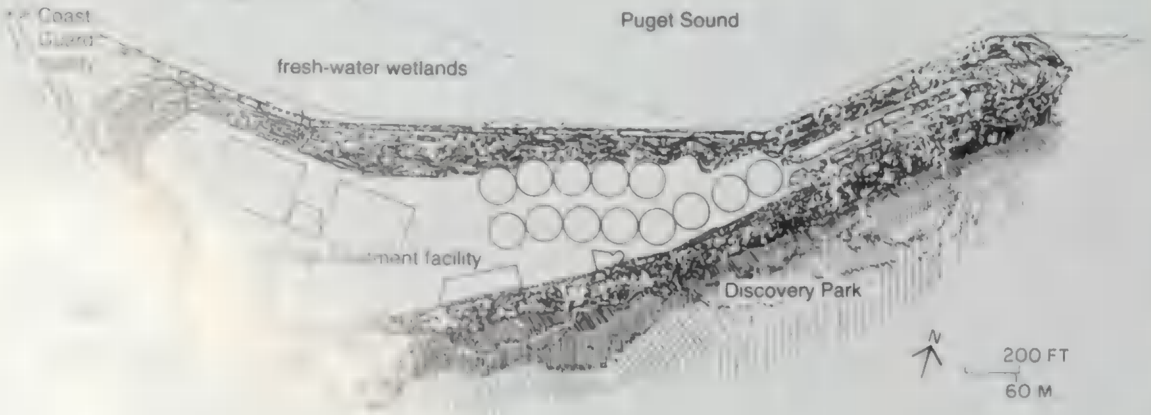
New York City
Karahan/Schwarting Architect

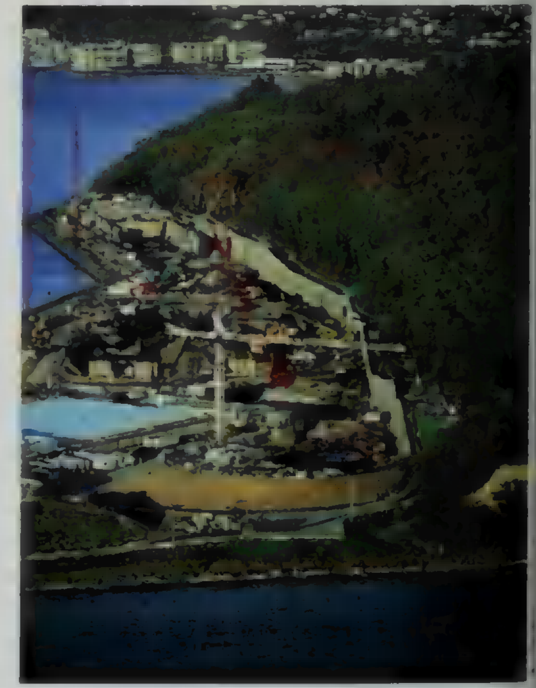




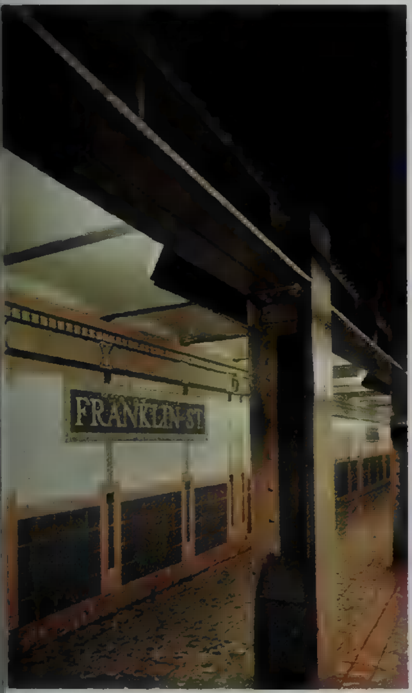
West Point Treatment Plant

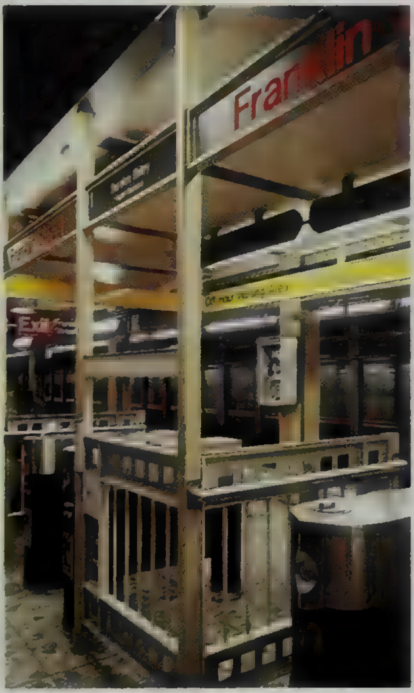
Seattle, Washington
Danadjieva & Koenig, Environmental Designer
CH2M Hill, Prime Engineer





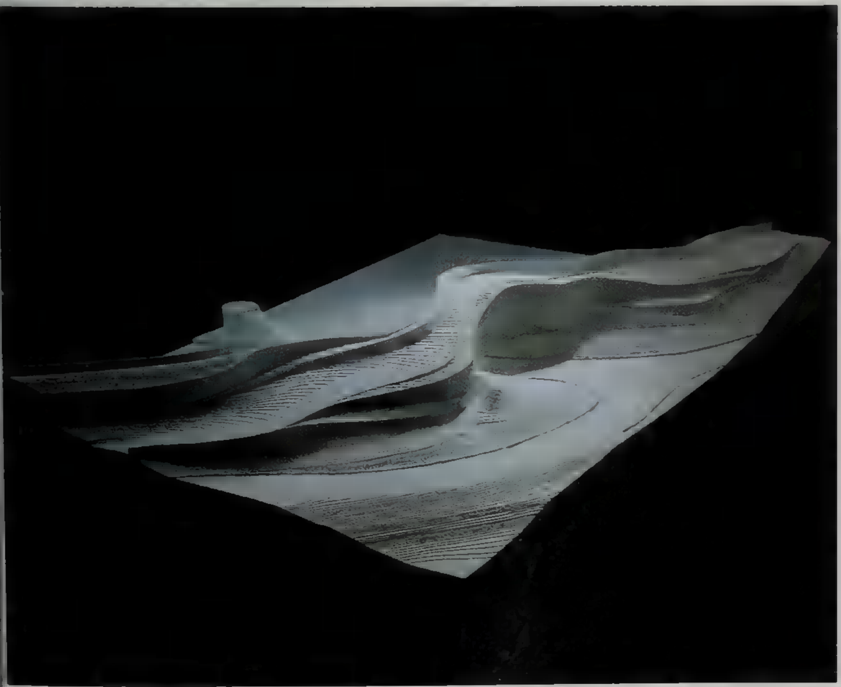
Also near Seattle, impetus to remodel Sea-Tac International Airport's concourses was in part to provide a warm civic welcome, in recognition that the airport is a major gateway to the Pacific Northwest. Likewise, the sculptural presence of the High Falls Garage in Rochester, N. Y., acts as both a gateway to the historic district and a tribute to that city's industrial heritage. Finally, a power-distribution station in Los Angeles got a gutsy, design-committee-approved facelift. All of the projects prove that infrastructure need not look crude or dull. Charles D. Linn





Station rehabilitation

Starting with an Otto-Wagner-inspired canopy, Michael Schwarting's renovation of the Franklin Street station has brought new life to a typically bleak subway station. The project was accomplished with Economic Development Corporation funds, and included input from a neighborhood merchant's organization which insisted on the canopy. The structure draws on an industrial vocabulary, using exposed bolts and columns built up from steel plates and angles as a structural system. A vaulted roof of terne metal crosses a grid of sand-blasted glass block that allows daylight into the stairwell. Schwarting reused the existing torchères and handrailing, and notes, "When viewed head-on, the lamps and vaulted canopy combine to look like a train pulling into the station." Below ground, the grungy concrete platform floor has been veneered with terrazzo tile. "We had a hard time convincing the transportation authority that it would be durable enough," laughs Schwarting, "but they liked the fact that chewing gum would blend right in." The walls of the station received new tile, but the original mosaic-tile station signage and border near the ceiling were left intact. Indirect fluorescent uplighting softens harsh shadows. ■



Out of sight, out of mind

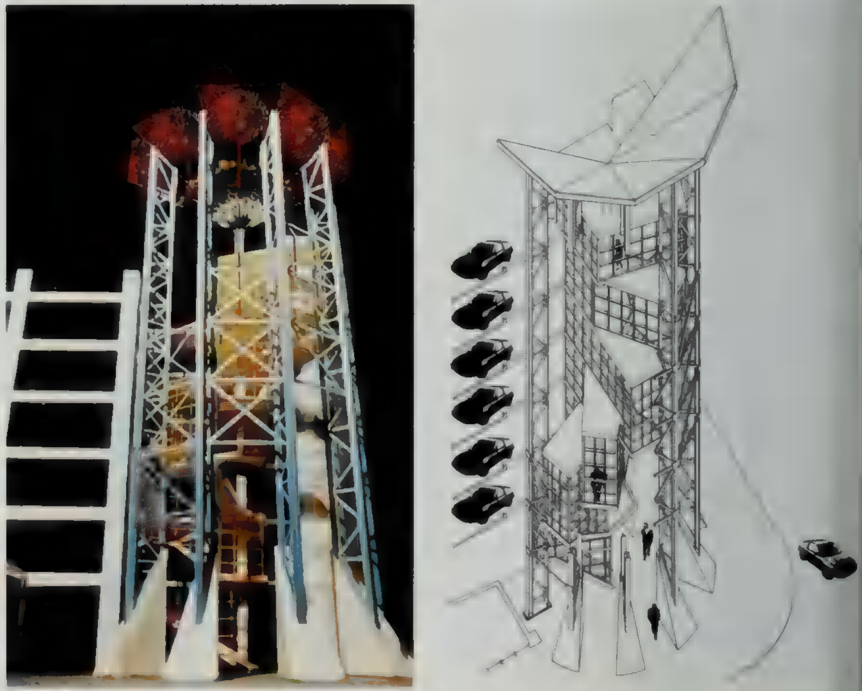
The environmentally sensitive site of the West Point Treatment Plant created unique design challenges for environmental designers Danadjieva & Koenig Associates and prime engineers CH2M Hill. In order to receive shoreline-use permits for the $578 million project, the Municipality of Metropolitan Seattle had to submit plans for controlling noise and odor from the plant, to conceal it from view, and to restore the landscape. Nestled on a spit of land between Seattle's Discovery Park and Puget Sound (plan, opposite left), several treatment plants have been located here over the years because unique local off-shore currents always carry outflow away from shore, regardless of tidal conditions. The current expansion (opposite right) is being jammed into 32 acres. CH2M Hill's engineers designed the plant to maximize capacity while minimizing footprint. Danadjieva & Koenig designed a bermed zone around the plant that will be used to screen it from view. The soft earth-forms (model, left) eliminate the need for hard, man-made surfaces like high walls and fences. The bermed areas will have recreational trails, and will be seeded with native plants and grasses. ■

Seattle-Tacoma International Airport Concourse Improvements

Seattle, Washington
NBBJ, Design Architect
Leo A. Daly, Production Architect

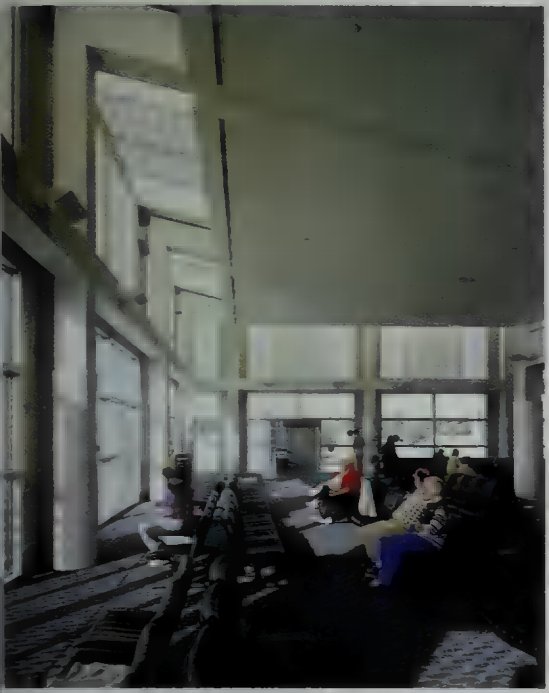
High Falls Garage

Rochester, New York
William Rawn Associates,
Design Architect
LaBella Associates, Architect of Record



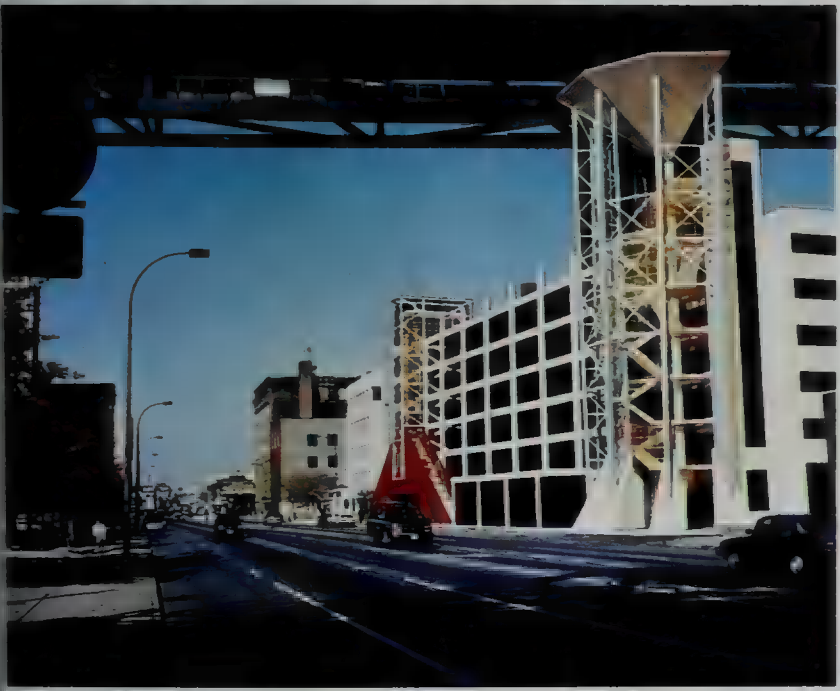
Sun Valley Distribution Station

Los Angeles, California
LPA, Inc., Architect



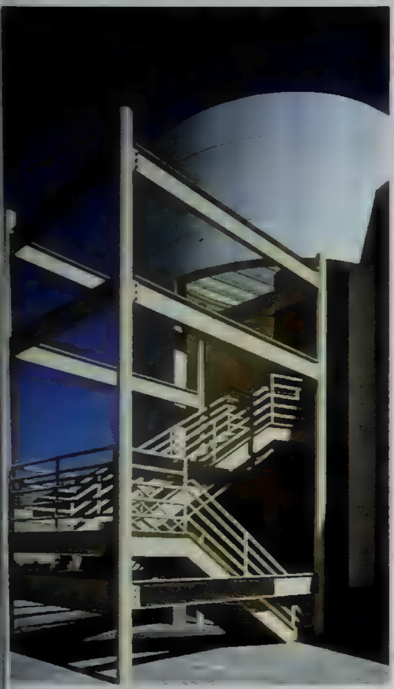
Facelift for flyers

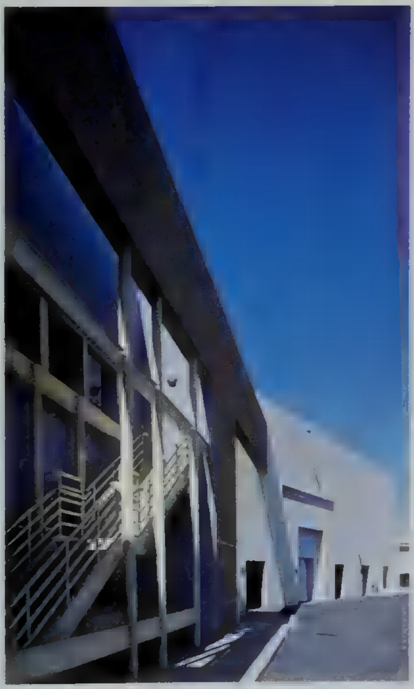
Sea-Tac International Airport's Concourses B, C, and D were a disparate amalgam of styles and construction types that had been erected since the 1960s. "The prime mission of the remodeling was to improve the airport's appearance as a gateway," says NBBJ's project designer Rick Zieve, "which is very important, since Sea-Tac is the first thing people see upon their arrival in the Pacific Northwest." The project involved adding from 12 to 38 feet to the concourse widths, and brightening passenger waiting areas through the expansion of view glass areas (left), and the addition of translucent insulated fiberglass-panel clerestories. The panels are uplit (opposite) to give the concourses a strong nighttime identity. In addition to interior and hvac improvements, the exterior structure of all three concourses was wrapped with white metal panels to unify their appearance. "As it becomes more and more difficult to build new airports, we'll see more airports expand and upgrade by remodeling existing concourses," says Zieve. ■



"Primal imagery" enlivens parking garage

Architect William Rawn says that because parking garages function as portals to downtown shopping and working districts, they may be *the* most important urban building type in medium-sized cities. "People have a choice. They can drive to the suburbs or they can drive downtown. If you build ugly parking garages, the people won't come." The entrance and stair tower of the High Falls Parking Garage will make it a delightful destination. Rawn describes the huge masonry pyramid where autos enter and scultptural steel stair tower as "primal imagery" that is inspired by the fragments of locks, raceways, and iron construction along the nearby Genesee River. Atop the stair tower, tilted screens will be used to reflect laser light to mark the garage during downtown Rochester's special night lighting events. "You have to give Rochester Mayor Thomas Ryan a lot of credit for this garage," says Rawn. "Parking garages are extremely important elements of the urban landscape. It takes a lot of courage on the part of politicians not to just keep on building things the way they always have been." The garage will be completed early this winter. ■





Order from chaos

The improvements to the Sun Valley Distribution Headquarters, an electric-utility-operations complex, uses a vocabulary of industrial materials—concrete block, steel mesh, and structural-steel framing—to unify an assortment of unrelated buildings dating from the 1950s. The grounds are wrapped by an articulated assembly of block and steel mesh (opposite) that serves as security fence, courtyard wall, and interior partition."The fence creates a dancing horizon line on an otherwise flat suburban wasteland," says architect Jim Wirick. Brightly colored I-beams cradling steel stairs mark the entries to two of the buildings, with a huge white steel drum overhead marking the entry to the main structure (left). This high-style was the mandate of a local design board, the Cultural Affairs Committee, a group that oversees the design improvements to publicly owned property. "The Department of Water and Power had to start getting design approvals on improvements to their property about five or six years ago," says Wirick. "Coincidentally, that's also when they started hiring outside architects to do the design work." ■

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Project: Sugar Bay Plantation Resort ™, St. Thomas, U.S. Virgin Islands / Architect: Archeon Architects, Memphis TN / General Contractor: Centex Rooney, Fort Lauderdale FL

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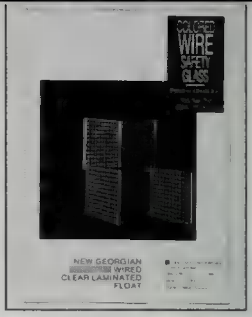
Product Literature / Glazing

For more information circle item numbers on Reader Service Cards.

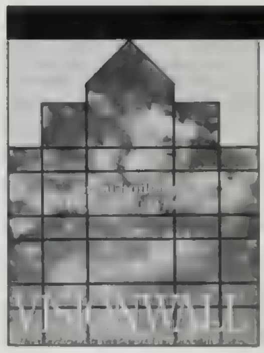
400. Glass-fabrication guide
A 28-page architectural catalog highlights recent high-rise curtain-wall projects using reflective, monolithic, and coated-glass products. Performance data are charted for each glass type and tint, and includes both ASHRAE and European U values. Viracon, Owatonna, Minn.

401. Venetian-glass panels
A brochure on Italian Formelle decorative glass outlines the design potential of the colorful panels, and explains the technical support available through the firm's New Jersey office. Panels are available in single-, double-, and triple-glazed, shatterproof, and bulletproof configurations for indoor and outdoor use. Leucos USA, Inc., Edison, N. J.

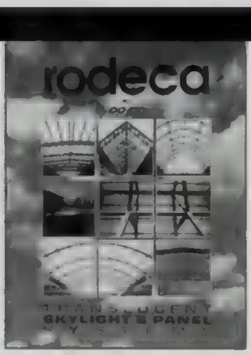
402. Low-E for vinyl windows
Thermaflect is a proprietary, two-coating low-E high-performance glass designed for this maker's welded-vinyl replacement window. The system—frame, glass, and spacers—is said to have the highest R value of any similar double-pane window. Glass has no color reflection or haze. CertainTeed Corp., Valley Forge, Pa.



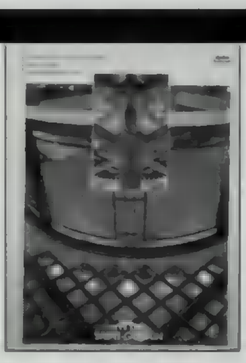
403. Colored-wire labeled glass
Fire glass that meets CSPC 16 CFR-1201 Cat., ANSI Z97.1, and ASTM C-1036 now offers six standard colors of wire mesh: black, red, blue, green, white, and yellow. The 1/4-in. laminated clear float glass is awaiting certification with ETL as to its 20-minute fire rating. Priced comparable to standard wire glass. Federal Doors, Inc., Fairfax, Va.



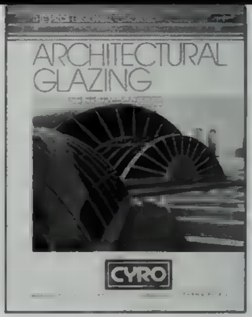
404. Energy-saving curtain wall
A color brochure illustrates recent Visionwall high-rise installations in the U. S. and Canada, and details insulating-unit components with cutaway drawings. The suspended-film system has a total-window R-value of 6.5 , and is available for curtain-wall, punched, and strip-window applications. Visionwall Technologies, Stow, Mass.



405. Translucent-sheet skylight
The Rodeca skylight and panel is a modular polycarbonate structured sheet with a self-supporting aluminum-frame system. Suitable for both vertical and sloped glazing, it comes in clear, bronze, opal, green, and blue tints. Co-Ex Corp., Rocky Hill, Conn.



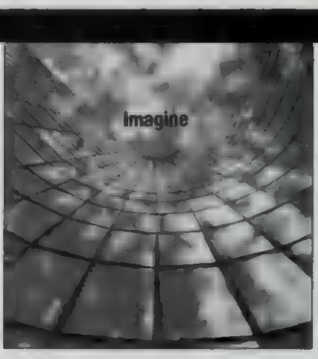
406. French architectural glass
A design guide features flat, reflective, and patterned glass, and glass-block products, made by Saint-Gobain and sold in the U. S. All patterns are illustrated in color, including 15 cast-glass styles in the new Masterglass line. Euroglass Glasrep Corp., White Plains, N. Y.



407. Chemical-resistant acrylic
A six-page guide describes Acrylite and other acrylic-sheet products, polycarbonate double-skinned, and monolithic materials, including glazing with superior abrasion- and ultraviolet-resistant characteristics. Technical sections cover the special installation requirements of plastic glazing. CYRO Industries, Mt. Arlington, N. J.

408. High-performance glass
A [illegible] catalog discusses perfor- [illegible] nical data for all LOF [illegible] glass, including Ever- [illegible] antage Low-E, [illegible] pane E. P., [illegible] tinted float- [illegible] ch glass [illegible] ens-

409. Lexan glazing
A colorful 20-page brochure illustrates Lexan polycarbonate in all its architectural permutations, including the most impact-resistant systems for almost-vandal-proof glazing and security enclosures. Details demonstrate suggested wet, dry, and dual-glazing installations. General Electric Co., Structured Products, Pittsfield, Mass.



410. Designing laminated glass
DuPont's *Imagine* booklet and companion videotape showcase dramatic architecture made possible with laminated glass—in skylights, floors, large atria, and secure enclosures—explaining its acoustic, solar-control, storm-resistant, UV-limiting, and decorative properties. E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

411. Glass-selection guidelines
A 24-page catalog covers glass-selection criteria: structural and thermal strength, solar-control tints and coatings, frit-pattern options, and spandrel and cladding glass in solid colors and patterns. All glass is illustrated as-used in recent built projects. PPG Industries, Inc., Ford City, Pa.

Continued on page 159

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Infrastructure *continued from page 99*

tional issues to respond to some larger civic need. Indeed, ISTEA mandates areawide planning, so that highway and transit facilities are genuinely complementary. Los Angeles architect William Fain is taking the concept even further, seeing in his city's plan for 450 miles of mass transit an opportunity to piggyback a system of greenways for a city that sorely lacks public open space. (The plan would also take advantage of unused rail rights of way and flood-controlled riverbeds.)

Thinking on this scale requires a kind of citizen involvement that is unfamiliar to many professionals. But just such efforts, under the umbrella of the Surface Transportation Policy Project (STPP), pushed through the most progressive aspects of ISTEA. "The STPP coalition [including the AIA, ASLA, urban planners, and the National Trust for Historic Preservation] was the first time we went beyond handcuffing ourselves in the path of bulldozers," explains Lisa Wormser of STPP. The process mandated by ISTEA is a kind of "trickle-up effect," she says. "The federal government says it wants state and local governments to drive the process upwards." It's already happening in St. Paul [RECORD, April 1993, page 31] and Pittsburgh, where the local AIA chapter sponsored a design charette to create a unified vision of what five separate engineering projects, most prominently, the Wabash Bridge (page 99), could contribute to the city's defaced waterfront. The group reviewed bridge-design options (the agency scheme was an off-the-shelf eyesore in this city of great bridges) and suggested a more integrated design that would improve access to the waterfront and provide a more useful location for a planned light-rail station. The scheme, though more costly than the projects considered separately, has been embraced by planners, public agencies, and the local press. Understating the case, chapter president Robert Pfaffmann says such projects, "need not be a necessary evil, but ould produce something greater than initially imagined." *James S. Russell*

Further Information

The Surface Transportation Policy Project ublishes a Resource Guide, which explains he ISTEA planning process and gives examples. STPP, 1400 16th Street, N. W., Suite 00, Washington, D. C. 20036.

'A Summary: Intermodal Surface Transportation Efficiency Act of 1991," is a 2-page pamphlet produced by the U. S. Department of Transportation, 400 7th Street, S. W., Washington, D. C. 20590.

"Financing the Future" provides broad background on federal infrastructure spending as well as recommendations for financing it. U. S. Department of Transportation, Office of Economics, P-37 (address same as above), 202/366-5412.

"Transportation Infrastructure: Urban Transportation Planning Can Better Address Modal Trade-Offs," is a brochure that explores efficiencies that can be derived from planning for transportation needs based on using the mode best suited for the problem (bus, rail, cars). United States General Accounting Office, P. O. Box 6015, Gaithersburg, Md. 20877.

"Fragile Foundations: A Report on America's Public Works," a report to the President and Congress by the National Council on Public Works Improvement, is out of print but should be available in libraries. ■

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Manufacturer Sources

For your convenience in locating building materials and other products shown in this month's feature articles, RECORD *has asked the architects to identify the products specified.*

Pages 100-105
Midfield Terminal Complex,
Pittsburgh International Airport
Tasso Katselas Associates, Architect
Precast concrete: Sidley Precast. Exterior masonry: Burns & Russell Co. (Spectra-Glaze). Metal cladding: Alucobond Technologies. Skylights: EPI. Canopy glazing: General Electric Plastics, Sheet Products Div. (Lexan). Modified-bitumen roofing: Tamko. EPDM membrane: Carlisle SynTec. Terne-coated stainless steel: Follansbee Steel Corp. Curtain wall: Kawneer Co., Inc. Glass: PPG Industries, Glass Group (Solar Gray). Automatic doors and entrance: Stanley Magic Door. Metal decking: EPIC Metals. Acoustic ceiling: Armstrong World Industries. Grid: Chicago Metallic. Latex and alkyd paints; red interior accent on metal surfaces: Sherwin-Williams. Special coating: Zolatone. Wallcoverings: Forbo Industries, Inc. (Vicrtex). Carpeting: Lees Commercial Carpet. Holdroom seating: KI. Exterior and pole fixtures: Kim Lighting, Inc. Moving walkways, escalators: Schindler Elevator Corp.

Pages 106-107
Landside Terminal, Denver
C. W. Fentress J. H. Bradburn and Associates, Architect
PTFE-coated fiberglass membrane: Chemical Fabrics Corp. Fabrication: Birdair Inc. Glass: PPG Industries, Glass Group. Entrances: Horton Automatics.

Pages 108-111
Pier 4/4A, Heathrow Airport
Nicholas Grimshaw & Partners Ltd., Architect
Profiled-metal cladding: British Alcan Aluminum Ltd. Curtain wall: Don Reynolds Facades, Ltd. Glass: Pilkington Glass Ltd. Single-ply roof: Sarnafil, Ltd. Coatings on metal: Pennwalt Plastics, Ltd. (Silver PVF_2). Sheet-rubber flooring: Freudenberg Co. Carpet: Collins & Aikman UK, Ltd. Lighting booms: Concord Lighting, Ltd. Moving walks: O & K Escalators, Ltd.

Pages 112-115
First Avenue Plant
Ellerbe Becket, Architect
High-bay lighting: Metalux. Decorative fixtures: BEGA/FS. Brick: Endicott. Glass block: Pittsburgh-Corning (Essex). Galvanized-steel roofing: Vincent Metals. Paints: Glidden.

Pages 126-129
Leamington Municipal Transit Hub
Ellerbe Becket, Architect
Aluminum-frame curtain wall: Harmon Contract. Cast-in-place concrete seating: custom by architects. Micrasilica additive for concrete: W. R. Grace. Single-ply roofing: Carlisle SynTec. High-bay light fixtures: Lithonia. Glazed block: Burns & Russell Co. (Spectra-Glaze.) Lobby ceiling: Armstrong World Industries. Phone kiosk: King Products, Ltd. Recessed lighting: Kurt Versen. Lobby benches: Forms+Surfaces.

Pages 130-135
Irving Avenue Parking Garage
Syracuse University
Bohlin Cywinski Jackson, Architect
Interior and exterior lighting, custom standards: Kim Lighting. Elevator: Otis. Operable grilles: Overhead Door Co.

Pages 136-137
Franklin Street Station
New York City
Karahan/Schwarting Architects
Sand-blasted glass block: Pittsburgh-Corning. Italian terrazzo tile: W. D. Virtue Co. Fluorescent lighting: McPhilben. White wall tile: Summitville. Gray base tile: American-Marazzi Tile Co.

Pages 138-139
Seattle-Tacoma International Airport Concourse
NBBJ, Architect
Translucent-fiberglass panels: Kalwall Corp. Textured-surface metal cladding: E. G. Smith Construction Products. ■

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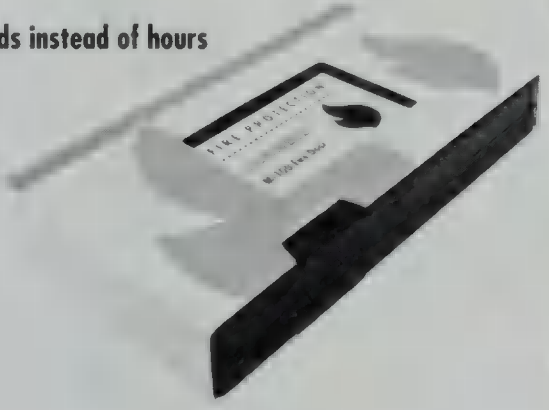

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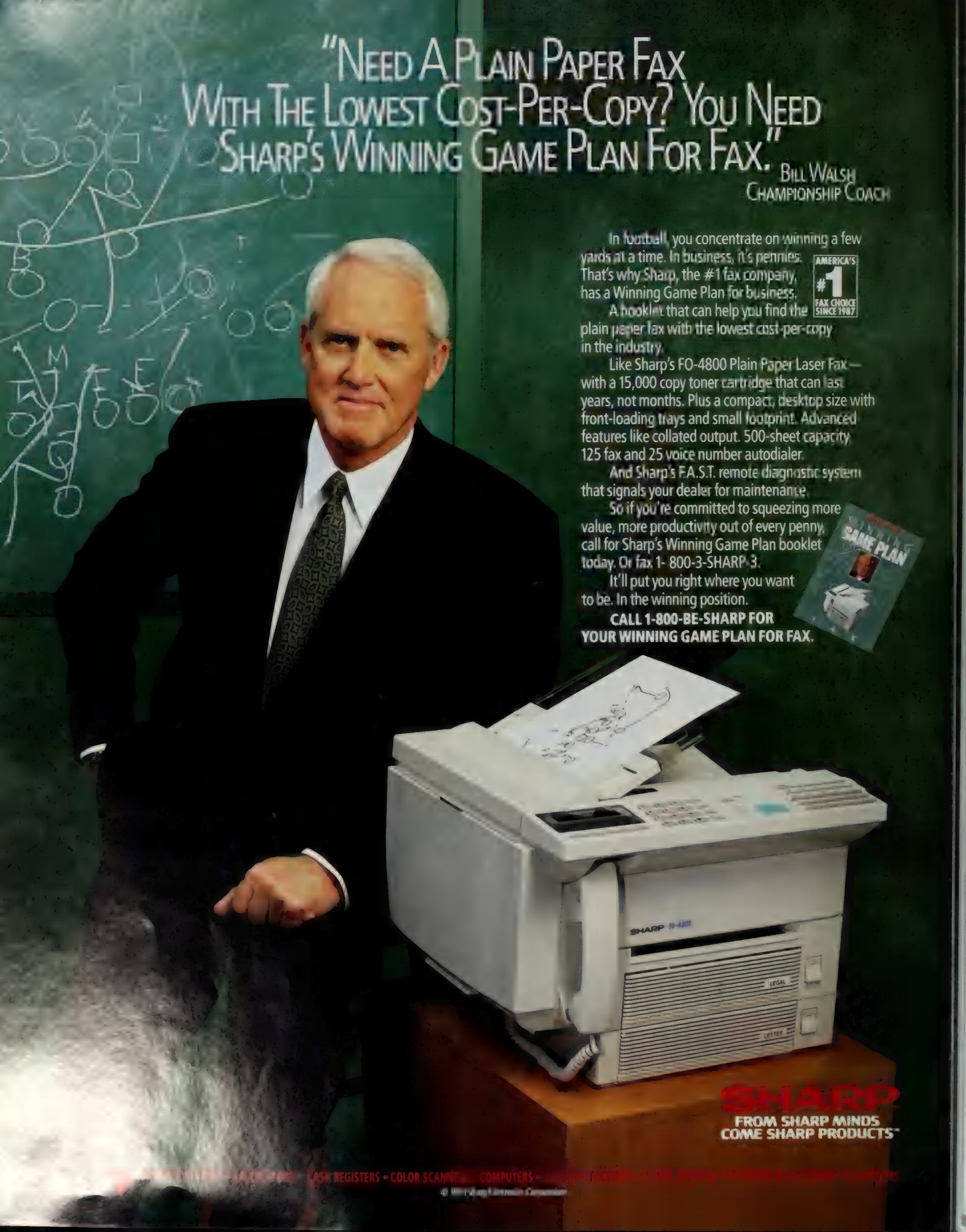

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Calendar *continued from page 4*

tects & International Architecture 1970-90 at the Chicago Athenaenum. Call Carolyn Armenta Davis, 312/266-0269 or Christian K. Laine, 312/280-0231.

June 16-19

Pacific Coast Builders Conference at San Francisco's Moscone Center. Contact Rick Arkus, 916/325-9300.

June 16-July 2

Chicks in Architecture Refuse to Yield (CARY), a "collective whose goals are to focus attention on the status quo of women and the position of women in the field of architecture," presents "Exhibition of Provocative Vignettes to Address AIA Convention in Chicago." Contact Kay Janis, 312/427-9290 or Sally Levine, 312/472-6747.

June 18-21

American Institute of Architects convention in conjunction with World Congress of Architects, Chicago. Contact Lynne Lewicki, 202/626-7467.

July 25-31

International Congress for the Conservation of Historical Cities and the Built Latin American Heritage at the University of Alcala de Henares. Write Secretariat of the V Congress, Plaza de Cervantes, 8 28801 Alcala de Henares, Spain; call 34-1 885-4014; Fax 34-1 885-4095.

August 1

"Moscow Avant-Garde Architecture: 1955-1991," presented by the Art Institute of Chicago. Contact Eileen Harakal or Patricia O'Connell at 312/443-3625.

September 8-12

"Frank Lloyd Wright and the Prairie School in Iowa," Mason City, Iowa. Contact Judith Trent, 708/848-1141 or Jeanette Fields 708/366-9342.

September 29-October 2

"Adapting in a Changing World," the Association for Preservation Technology International's 25th anniversary conference, Chateau Laurier, Ottawa, Canada. Contact Robert Hunter, 819/997-6974 or Fax 819/953-4909.

Competition

The Concrete Reinforcing Steel Institute Design Awards XII Competition for Concrete Structures. Deadline October 1. Open to registered architects and other building professionals. Write CRSI, 933 N. Plum Grove Road, Schaumburg, Ill. 60173-4758. ■

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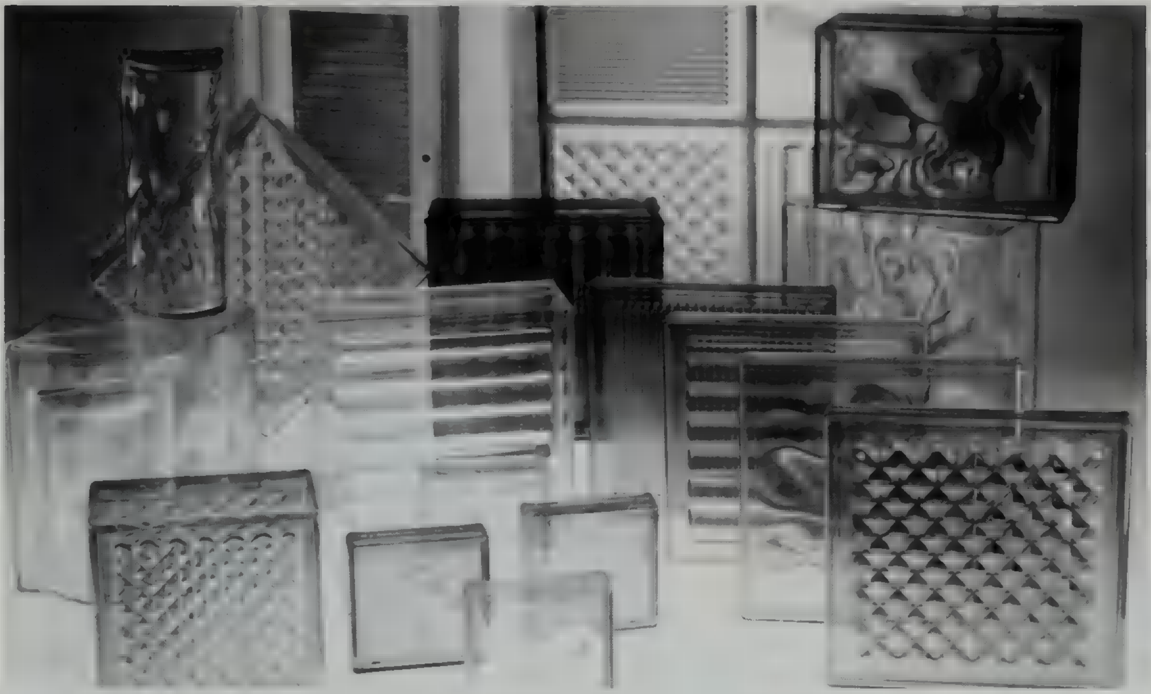

05. Warm and dry
new gray-colored matrix desiccant, nsul-Dri, adsorbs moisture from insulating lass, resists long-term exposure to UV, oisture, and thermal shock, and blends ell with steel spacer constructions. It was eveloped for glass-house use with PPG's ntercept insulating-glass edge system. . B. Fuller Company, St. Paul, Minn.

306. Acrylic block
A Plexiglas product 87 percent lighter than glass units, block comes in a variety of colors and surface patterns, as well as corners and end-cap shapes. Described as equally suitable for interior and exterior construction, the block is guaranteed not to discolor or fade for up to 19 years. Guardian Plastics, Inc. Jeanette, Pa.

Continued on page 153

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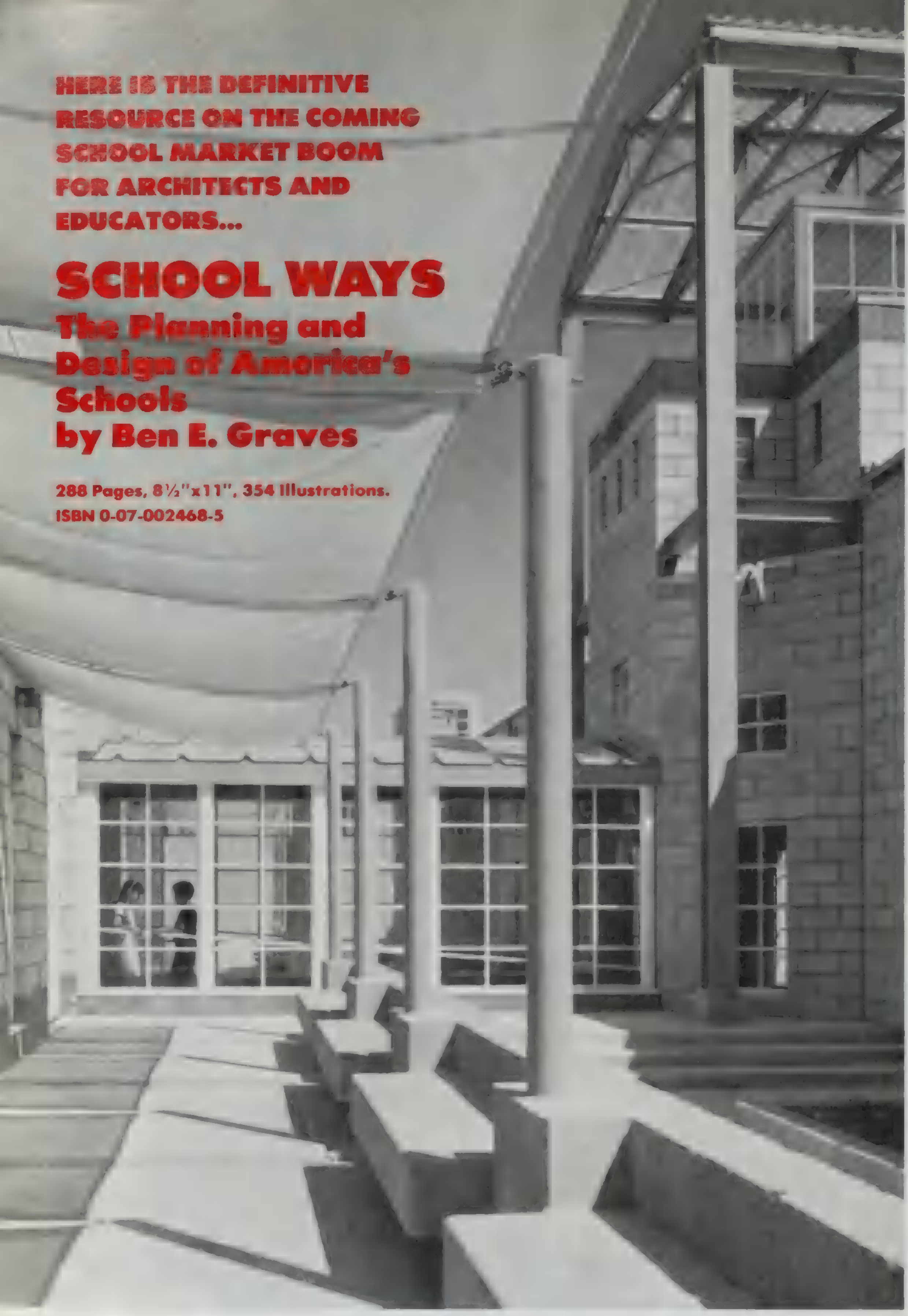

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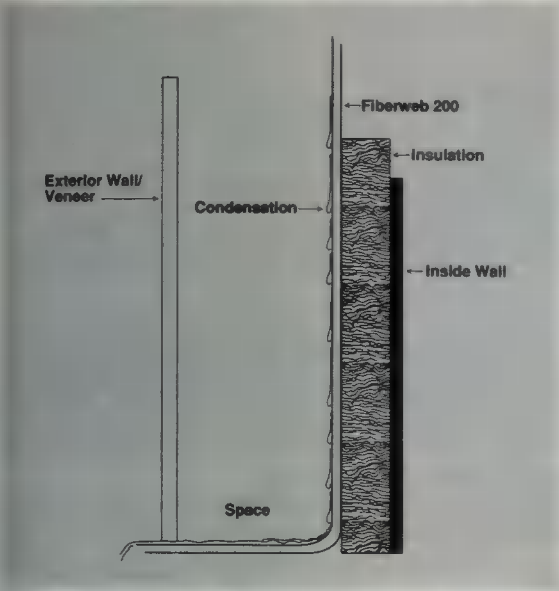
New Products *continued from page 151*

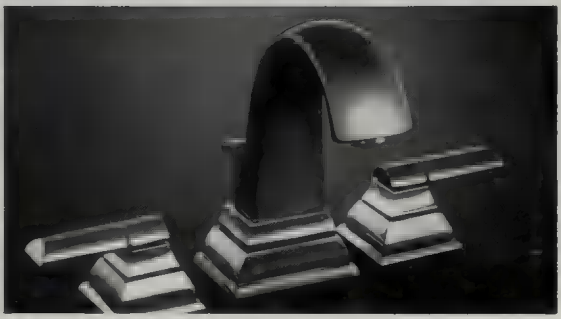


307. Flexible fabric flashing

Fiberweb 200 is a fiberglass-reinforced polyester flashing backed with waterproof vinyl acetate, materials that resist the caustics and alkalies found in concrete and mortar. Offered in a range of widths, flashing is suggested for use in insulated veneer-wall systems which tend to cause accelerated corrosion of masonry ties and metal studs. Flashing is said not to shrink, sag, or delaminate for at least 100 years. Dur-O-Wal, Inc., Arlington Heights, Ill.

308. Heavy-duty entrance

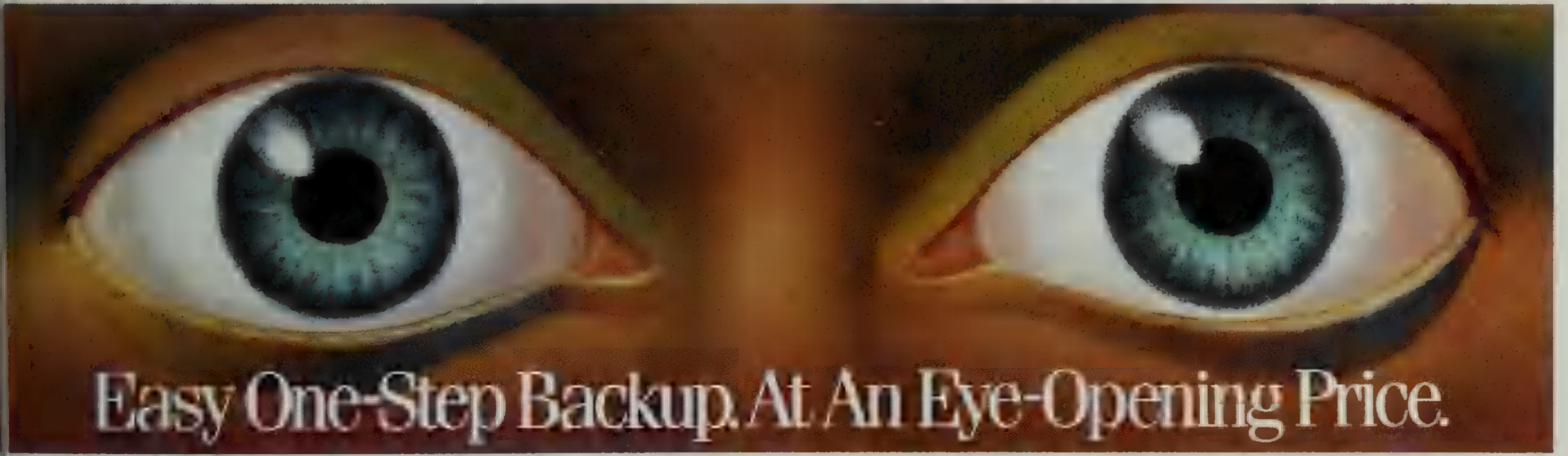
A flush-panel style made of fiberglass-reinforced polyester, the Vision Lite door has a rustproof, seamless face that is not affected by repeated cleaning with strong disinfectants and industrial-maintenance products. FRP surfaces can be specified in any of six colors, different sizes, and several vision-glass options. Vistawall Architectural Products, Terrell, Tex.



309. Architectural faucet

The Neuville fitting has a tapered escutcheon and semi-cylindrical lever handles described as "ritzy art deco." Offered in chrome, brass, and nickel finish options, the fitting comes in designs for lavatories, baths, showers, and bidets. Kohler Co., Kohler, Wis.

Continued on page 155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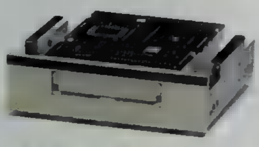

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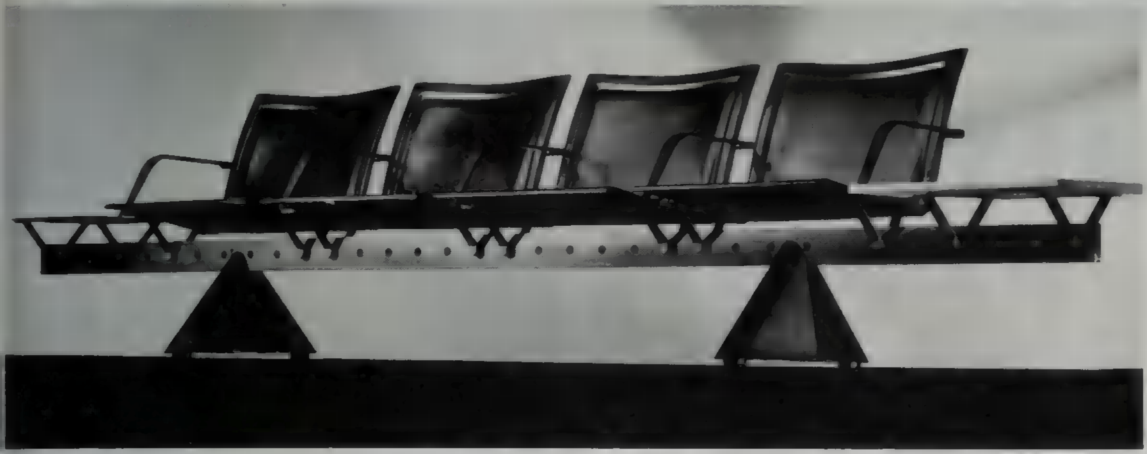
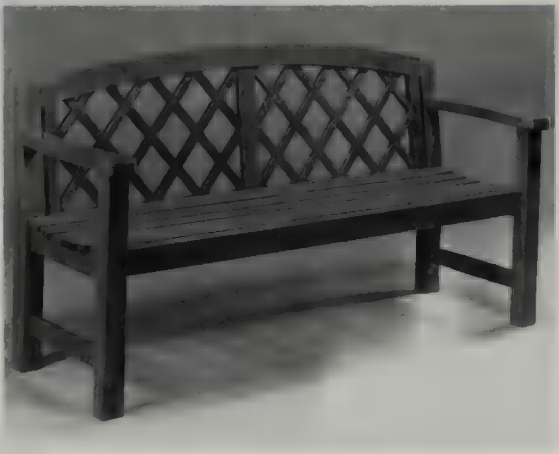
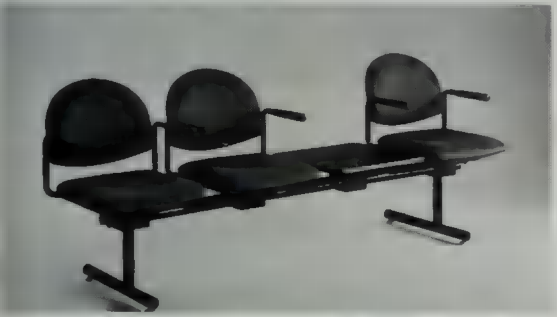




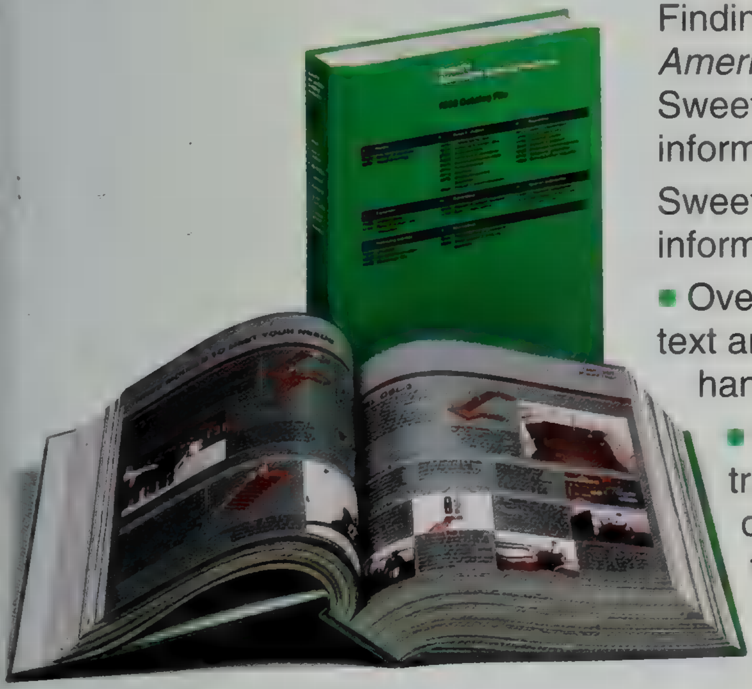
310. Large-scale beam seating
The Meeting Collection, designed and made in Italy by Matteograssi SpA (who have been building leather saddles since 1880), uses double layers of European coach hide set on an aluminum-alloy support beam as seating suitable for Executive Class lounges in airports or other large waiting areas. Seats and backs, made of hides 2.5mm thick, come in 25 colors; optional inset tables are marble. Brianza Furniture International, Ltd., High Point, N. C.



311. Waiting-room furniture
Versa Conference Tandem seating, based on a double-tubular steel beam that supports both seat and table modules, matches free-standing stack chairs. Legs and beams can come in any of 30 powder-coat colors; corner tables provide an attachment for a 90-degree beam application. KI, Green Bay, Wis.

312. Traditional-style wood benches
Made of Indonesian shorea, a decay-resistant resinous hardwood that weathers gray, public-area chairs, benches, planters, and tables are recommended for outdoor use. Though the pieces may be left natural, they are also available in a range of custom-color finishes including lacquer, stains, polyurethane paints, whitewash, and aniline dye. Continental Creative Sales, Inc., Garfield, N. J.

Continued on page 157



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313. Wood-face fire door
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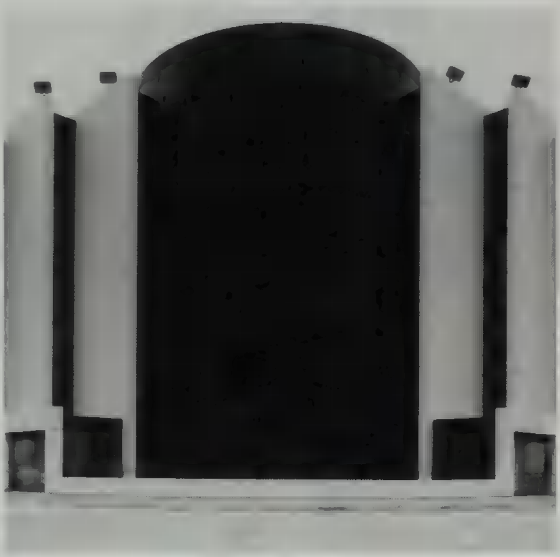
314. Faucets for healthcare
Designed by architects Stanley Tigerman and Margaret McCurry, wrist-blade handles and gooseneck spout are said to offer ease of use and excellent water control. American Standard Plumbing Products, Piscataway, N. J.



315. Curved tempered glass
A new bending line can handle tempered glass over 3/8-in.-thick, in virtually any shape or size, and combine tempered with laminated glass. The Toyota AirFlite Center (Jeffrey M. Kalban, architect) uses 1/2-in. glass across a 50-ft radius. Dlubak Corp., Freeport, Pa. ■

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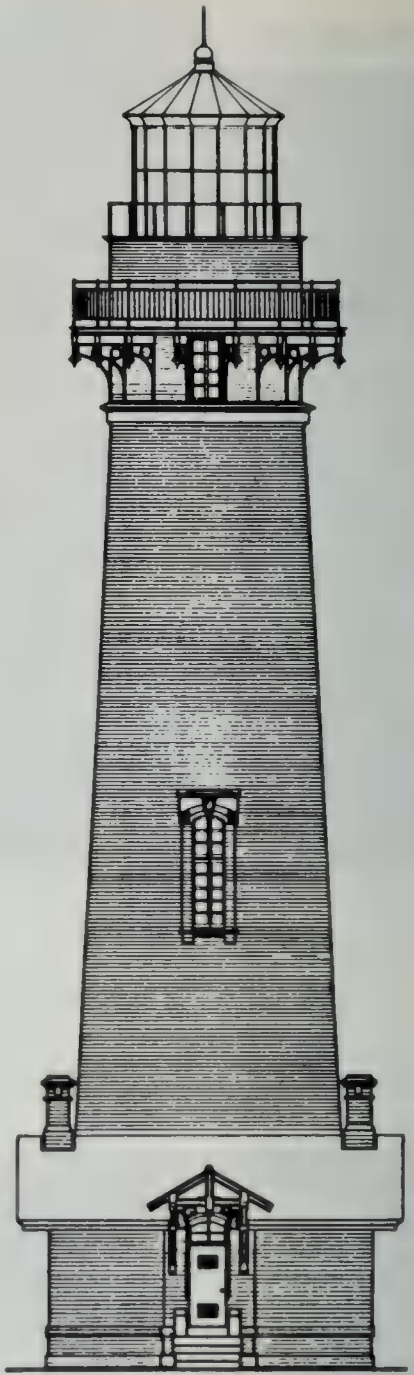

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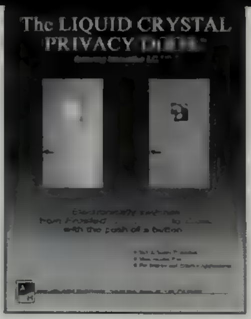
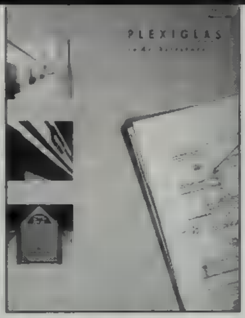
412. Coated glass
A brochure describes low-emissivity, multifunction, and solar-control coatings for application to insulating, spandrel, and residential glass. Easy-to-read charts match performance data with all substrate/coating combinations. Interpane Coatings, Inc., Deerfield, Wis.

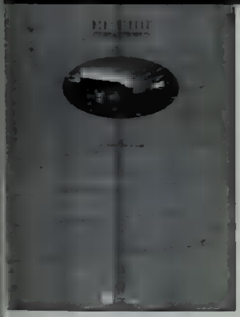


413. Electronic shading
A data sheet describes a commercial door offered with a liquid-crystal vision-light option. The glazed inserts go from private/opaque to view/clear at the touch of a remote switch. LC glass can also be ordered in colors, and in larger-light sizes. Abadi/Hollander Corp., Bayside, N. Y.

414. Laminated glass
A 28-page catalog covers all aspects of laminated-glass specification, from the dynamic racking performance of curtain-wall systems in an earthquake to its safety value used in zoos (or prisons). CAD-based structural-design programs are available free of charge. Monsanto Co., St. Louis.



415. Plexiglas in architecture
A color catalog presents general design principles on Plexiglas acrylic plastic for building applications, and specific design and specification recommendations on Plexiglas sheet for window glazing. Specialty products include a range of Flair patterns, which resemble cast glass, and ultraviolet-filtering sheet. AtoHaas North America, Inc., Philadelphia.



416. Solar-control glazing
An 18-page brochure provides tech-
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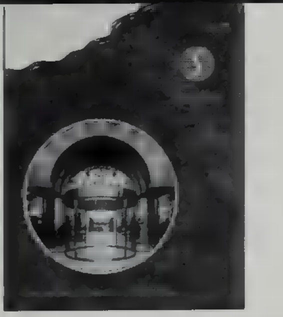

417. Printed-pattern glass
Sumitec catalog illustrates the decorative and solar-control potential of various safety-glazing products, including Sumiglass printed-interlayer laminate and light-refracting PrismGlass. Sumitec, Inc., Benton Harbor, Mich. ■

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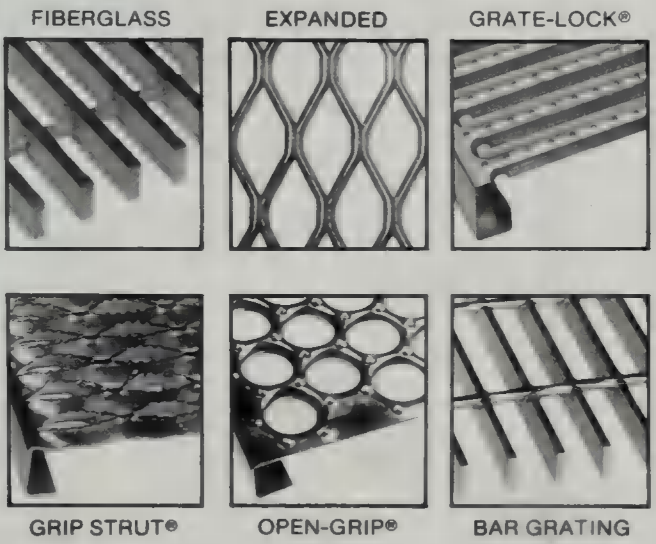

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Please send full resume by courier giving details of qualification, experience, present and expected salary, office and home telephone number together with a recent photo to B63 Provident Centre, Wharf Road, North Point, Hong Kong before June 25, 1993.

Architect: designs interior & exterior spaces of residential development projects. Provides architectural services related to design and construction of the structures. Plans layouts of project and integrates engineering, surveying and architectural elements into a unified design. Prepares preliminary sketches, technical drawings and color renderings. Part of the project design team planning real estate development in United States, take the lead in such planning for China. Available to travel to the Far East. Knowledge of architectural, construction requirements and real estate market in China through work experience. Ability to perform stated duties by portfolio. Masters degree in Architecture or equivalent from NAAB accredited university and one year work experience. $27,000 per year, 40 hours work week. Equal opportunity employer. Application by resume. Send resume with social security numbers to the Indiana Department of Workforce Development, 10 N. Senate Avenue, Indianapolis, Indiana 46204, Attention: Gene R. Replogle. Refer to Job Order # 3288536.

Architectural Facility Programmers-- SH&G seeks degreed and registered architects for positions within its expanding Programming & Planning Group. The successful candidates will participate in programming interviews/workshops, data base development and analysis, execution of project programs, report writing, and business development. Candidates must have a minimum [illegible] architectural and facility [illegible] experience including at least [illegible] large health care projects. [illegible] research lab experience also [illegible] presentation, leadership, [illegible] skills, in addition to re[illegible] and word pro[illegible]. If you are a self [illegible] challenged, please [illegible] confidence to Human [illegible] Smith, Hinchman, & [illegible] W. Jefferson, Suite [illegible] Equal Opportunity em-

Senior Architect for Forensic Practice We need a full time architect for our Lancaster, Pennsylvania office and part time in other Mid Atlantic areas. We provide technical support for litigation related to professional liability, construction disputes and accidents, facility failures, and personal injuries related to building design. Must be able to communicate effectively orally and in writing. Must be a mature professional architect (registered, NCARB and degree) with experience in the design, construction and maintenance phases of a wide range of buildings and facilities. If interested, please send resumé: Smith & Robson, Forensic Engineers, Architects and Scientists, 354 North Prince Street, Lancaster, PA 17603

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Project Coordinator, 40hrs/wk., 9am - 5pm, $28,800/year. Analysis of architectural requirements and development of schematic and detailed designs. Establish/manage computer systems for the CAD production of architectural details and construction documents. Construction administration of building repair projects including on-site survey, inspection and parking garage repair. Interior design. Master of Architecture as well as six months experience as a Project Coordinator or Designer required. Previous six months experience must include: CAD production of architectural details; interior design; budget calculations using spread sheet software; parking garage repair; survey; construction administration. Must have proof of legal authority to work permanently in the U.S. Send two copies of resume to: Illinois Department of Employment Security, 401 South State Street, Chicago, IL 60605, Attention: Jean Woodson, Reference #V-IL-10078-W. No calls. An Employer Paid Ad.

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HONG KONG TRADE DEVELOPMENT COUNCIL
HONG KONG CONVENTION AND EXHIBITION CENTRE
PHASE 2 (EXTENSION)

CONCEPTUAL ARCHITECTURAL STUDY

The Hong Kong Trade Development Council invites expressions of interest from Architectural Practices in connection with the preparation of a conceptual architectural study for Phase Two (Extension) of the Hong Kong Convention and Exhibition Centre.

It is envisaged that the Extension will more than double the size of the existing facility. Exhibition, Conference and ancillary space will be constructed on reclaimed land to interface with new and existing infrastructure. The Extension must integrate functionally and aesthetically with the existing building and must meet no less than equal standards of quality, finish and technical specification.

It is the Council's intention to shortlist applicants based primarily on the following information:-

o Previous recent commissions with a contract capital cost value in excess of US$100m.

o Previous experience of major high capacity public assembly buildings such as Auditoria, Trade Centres, Conference Halls and the like would be an advantage.

o Details of the applicant's professional and technical resources in each of its principal locations of operation.

o Specific details of projects (if any) undertaken in Hong Kong.

o Details of the applicant's associations with Hong Kong Practices (if any) plus an indication of how the applicant would ensure compliance with the Hong Kong Buildings Ordinance.

Responses should not exceed five pages of single sided A4 text and must arrive by post no later than 12.00 pm on ***12/7/93***.

Expressions of interest, contained in a sealed envelope marked on the cover "HKCEC-Extension" are to be sent to:-

Hong Kong Trade Development Council
38th Floor, Office Tower
Convention Plaza
1 Harbour Road
Wanchai
Hong Kong

For the attention of Mr. Henry Chan

Shortlisted Practices will subsequently be invited to make a detailed submission based on a package of project information that will be issued to them at that time. The Council does not bind itself to take up any expression of interest or to provide any reasons for the shortlisting, or otherwise, of any applicant.

This Advertisement will also be placed in Hong Kong.

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Product Literature Showcase

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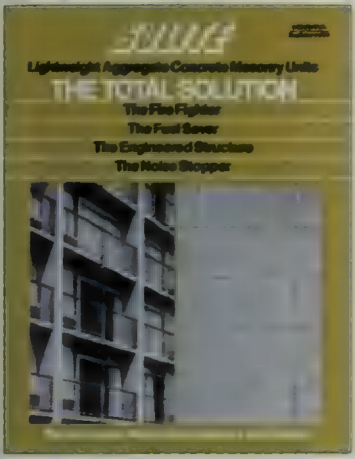

SOLITE® lightweight aggregate concrete masonry units provide the total solution for your building needs. 8-page brochure features multi-function wall system of concrete masonry units composed of rotary kiln produced aggregate. Fire resistance - up to 4 hr. rating. High insulative values save fuel. High resistance to sound transmission provides maximum privacy. Brochure also explores the benefits of an engineered masonry structure. P.O. Box 27211, Richmond, VA 23261
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SOLITE Corp.

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PLASTRGLAS, Inc.

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Revere Copper Products

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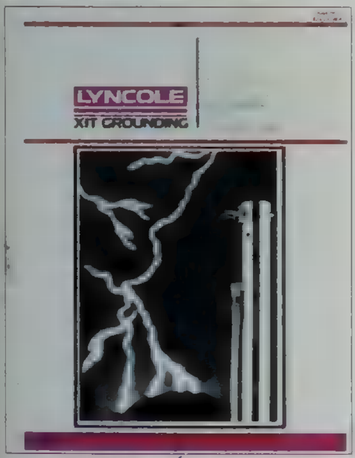
Grounding System



The XIT electrolytic grounding system provides the most stable, low resistance earth grounding regardless of soil type, chemical or moisture content. The XIT system includes the rod filled with nonhazardous metallic salts, exothermic connection, backfill material and protective cover. It requires less real estate and has a life expectancy three times that of driven rods. XIT grounding systems find use in communications systems, electrical substations, computer rooms, and more.

XIT Grounding/Lyncole Ind.

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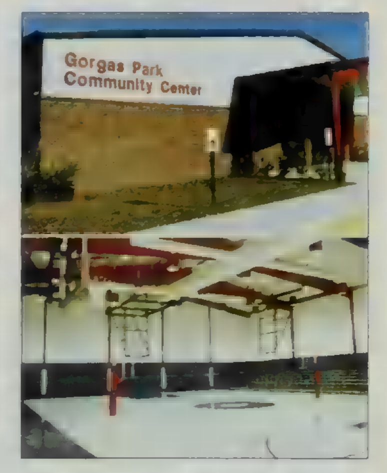

Gorgas Park Community Center, Mobile, AL, chose United Panel's STENNI aggregate & STENNEX smooth face panels for its exterior & interior applications because of their superior beauty, quality, durability, & cost effectiveness. They are available in a variety of surfaces & colors, & their flexibility makes them easy to install & maintain. Call 1-800-933-8700. Or write: United Panel, Inc., P.O. Box 188, Mt. Bethel, PA. 18343.

United Panels, Inc.

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Ceco Building Systems

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Fritztile introduces "A New Generation of Classics" with its Classic 200 & 600 Series flexible terrazzo floor tile. Accented with imported and domestic marble this dynamic flooring is available in a range of colors from pastels to earthtones. Exceptionally wear and stain resistant, Fritztile is perfect for commercial, institutional and residential applications - anywhere beauty and durability are important.
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Fritztile

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Domtar Gypsum

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Raymond Enkeboll Designs

An extensive selection of Architectural elements carved from woods. Color Product Catalog shows over 380 carved moldings, capitals, [illegible] The 88 page [illegible] illustrates [illegible] Baths [illegible] and [illegible] and [illegible] 380 [illegible] designs

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Ancor produces close to three dozen No. American and imported granites in a full range of colors and finishes for residential, commercial and institutional use. Standard format is 12 x 12 x 3/8"; other sizes up to 18 x 18 x 1/2" available. Ancor's honed finish tile is particularly suitable for high traffic commercial areas. 435 Port Royal West, Montreal, Quebec, H3L 2C3, Canada. Ph# (514) 385-9366, Fax# (514) 382-3533

Ancor Granite Tile

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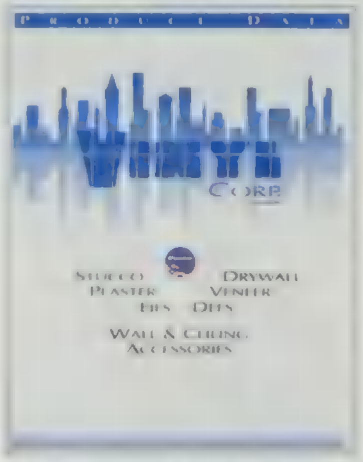
NEW PRODUCT CATALOG



Vinyl Corp. manufactures the most extensive line of over 450 quality wall and ceiling accessories for stucco, plaster, EIFS, DEFS veneer and drywall. All accessories are exclusively manufactured with BF Goodrich Geon® Vinyl compounds. For more information call (800) 648-4695, and ask for Vinyl Corp's. new product catalog. VINYL CORP., 8255 NW 70th Street, Miami, FL 33166.

Vinyl Corp.

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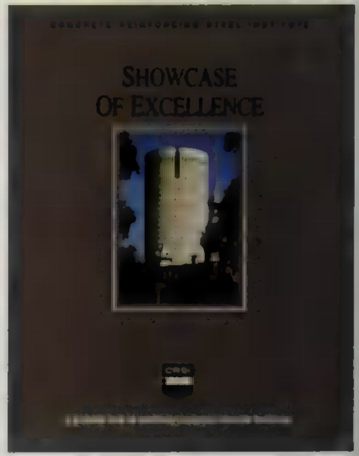
Brochure Features Concrete Construction



Produced by the Concrete Reinforcing Steel Institute, this 16-page, 4-color brochure pictorially highlights the advantages & benefits of cast-in-place reinforced concrete. Thirty-seven structures are featured in nine categories, including: Parking Structures, Housing, Commercial Buildings, Educational Buildings & Recreational Facilities. All show the strength and versatility of concrete.

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Duraflake

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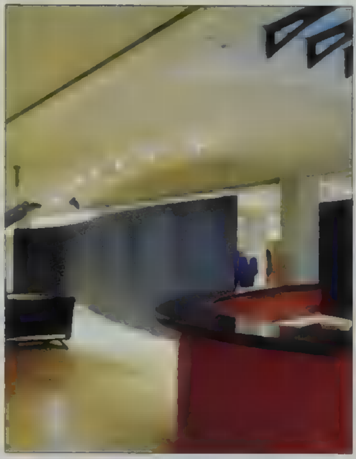

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Moldcast Lighting

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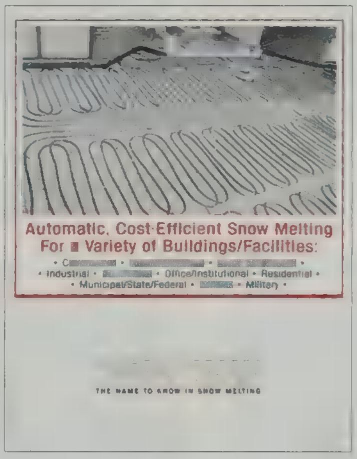
Snow Melting System



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Columbia Equipment Co.

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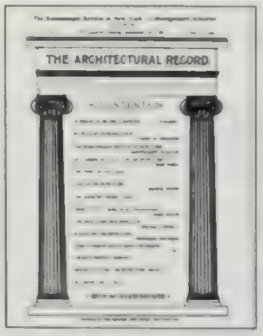

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THE MARKETPLACE

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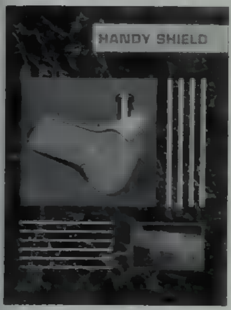

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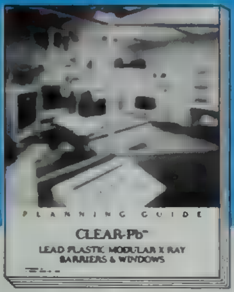

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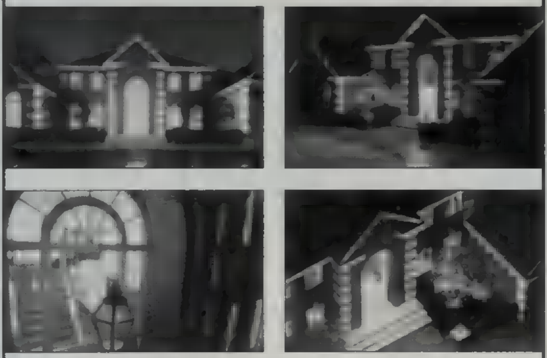

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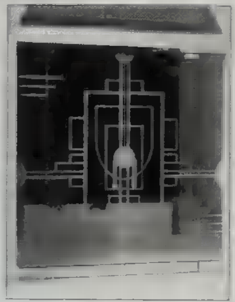

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Sales offices

Main Office

McGraw-Hill, Inc.
1221 Avenue of the Americas
New York, New York 10020

Publisher
Roscoe C. Smith III (212) 512-2841

Administrative Assistant
Anne Mullen (212) 512-4686

Director of Business and Production
Joseph R. Wunk (212) 512-2793
Fax: (212) 512-4256

Assistant Promotion Manager
Sheryl Berger (212) 512-2234

Classified Advertising
(801) 972-4400

Editorial
(212) 512-2594

District Offices

Atlanta
4170 Ashford-Dunwoody Road
Atlanta, Georgia 30319
Ollie Bieniemy (404) 843-4781
Fax: (404) 252-4056

Chicago/Dallas/Houston
2 Prudential Plaza
180 N. Stetson Ave.
Chicago, Illinois 60601
Thomas P. Kavooras, Jr.
(312) 616-3338
Fax: (312) 616-3323

Philadelphia
1700 Market Street
Suite 1520
Philadelphia, PA 19103
Tom Esposito (215) 496-3834
Fax: (215) 496-3828

Los Angeles
Media Sales Associates
1493 Temple Hills Drive
Laguna Beach, Calif. 92651
William Hague (714) 494-8419
Sherylen Young
Fax: (714) 497-7261

New England/New York
1221 Avenue of the Americas
New York, New York 10020
Louis Kutscher (212) 512-2814
Fax: (212) 512-4256

New York
1221 Avenue of the Americas
New York, New York 10020
Laura Viscusi (212) 512-3603
Fax: (212) 512-4256

San Francisco/Seattle
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9017 Peacock Hill
Gig Harbor, WA 98332
William Hague (206) 858-7575
Fax: (206) 858-7576

Canada
Frank B. Spangenberg
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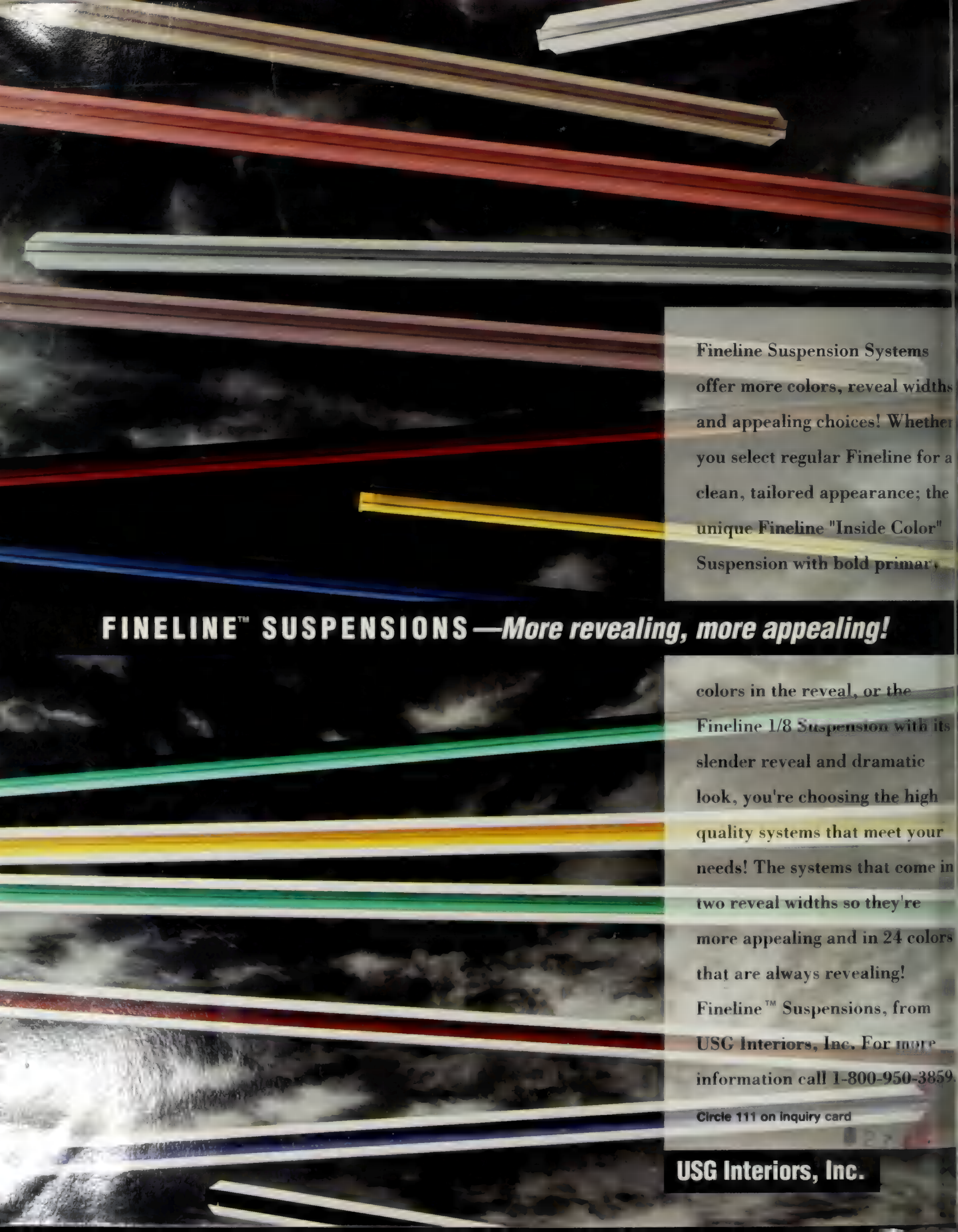

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